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JULY 1998
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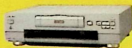
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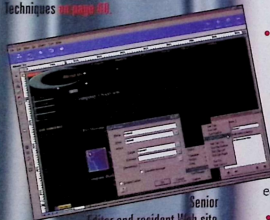
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PC GRAPHICS & VIDEO

QuickTime 3 is enabling Web designers to build dynamic pages that automatically deliver optimum quality to Web users. Read the feature on page 30.



Using Adobe Premiere and Caligari trueSpace to create some wacky effects. See Techniques on page 48.



Senior Editor and resident Web site designer Jacqui Summers puts Fusion 3.0 through its paces. Read the review on page 66.

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Model: Mik Shore/World Wide Design.

Cover: Image created by Dan Taylor & Eric Bell at Studio-360 using Adobe Photoshop 4.0 and MetaCreations Infini-D 3.5 on an AST Pentium MMX with 128 MB RAM, and a 300MHz Mac G3 with 96MB RAM.

Heard any great monitors lately?



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PUBLISHER'S NOTE



The PC Workstation

PC workstations
are in many ways
the backbone of
this industry.

I recently was asked by an advertiser about the number of workstation users in the *PC Graphics & Video* readership. I thought it an interesting question for a number of reasons. First, it gave me a reason to look into the hardware choices of the readers, and second, it made me spend time thinking about the workstation market, especially as it pertains to digital content creation.

PC Graphics & Video readers come primarily from the corporate/business market. That does not mean you're walking around in a white shirt and tie, it means that you either create digital media for the company you work for, or your clients come from those areas. So the question is: How many of you work with workstations as opposed to a desktop PC?

By the time you read this, our new readership survey will be back. However, the last survey, done in 1996, offers some tantalizing insights into who you are, what you work with, and where you are heading, hardware-wise. We asked you which of the following hardware systems you planned to purchase. The results (at right) are impressive: In 1996, 84 percent of you planned to buy Pentium Pros, DEC Alpha or SGI workstations. When one consid-

ers the comparatively high cost of those workstations in 1996, the information is even more impressive. It shows our readers are power users who need the most powerful machines and are willing to pay for them.

Workstations are in many ways the backbone of this industry. We

Pentium Pro	39%
Dual Pentium Pro	21%
Intel-Based Server	10%
Alpha	6%
SGI	6%
Alpha-Based Server	2%

load them with cutting-edge apps and expect them to do what we want and do it right now.

Workstation vendors have stepped up to the plate and given us what we want—more power for less money. This is great news for the consumer, because companies like Dell, Compaq, and Gate-

way know how to profitably shave margins. Cheaper prices allow more workstations to get into the hands of more creative people, and it means that other VARs are feeling the pressure of new, significant competition.

This is not to say that the Intergraphs and SGIs of the industry don't have a place in our market—they do and it's one of leadership.

It's their role to keep producing the best machines for content creation, so those of us with cutting-edge needs have a place to turn. What this means for end users is better systems at ever lower price/performance points. And that's good business news for everyone.

Be seeing you
Lou Wallace

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FEEDBACK

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CANVAS 5

J. Scott Hamlin hit it right in his May review article when he said that Canvas 5 is weak in bitmap layering, headers and footers, text wrap, and documentation. I am an intermediate-level user of Canvas 5. For many users at this level, Canvas 5 will do just nicely given its many features, especially its integration of drawing, page layout, and image manipulation, as well as its \$599 advertised price.

I hope, however, Dencha Software is listening, and responds with an upgrade to address the above shortcomings.

Dennis Luz
luzatseb@metro.net

CAPTURING VIDEO

I am getting ready to buy another Windows 95 computer for our shop, with the intention of using it specifically for Macromedia authoring tools, Adobe After Effects and Premiere, and similar video applications. I will use video camcorders and other digital hardware to bring in the images. Do you have any information on video capture boards and computer specifications for video apps? I am new to this area.

Harry Roolaart
hroolaart@worldnet.att.net

There are a number of inexpensive boards available that will compress composite or S-Video. However, I am reluctant to recommend one right now because low-end video production is rapidly following high-end video from analog to digital.

The quality of the image from new, inexpensive digital video cameras with 1394 Fire Wire ports, like Sony's DCR-VX1000 and Canon's Optura and XLI, is so much greater

than the older analog models that trading up is advised.

There are boards that offer both analog and 1394 ports, but 1394-only boards are much less expensive because they don't need extra chips to compress the video; they just copy it in native digital form to your hard drive. Fire Wire also can take the place of your disk drive bus, allowing better internal video quality and hot change from one hard drive to another.

Phil Flora
Independent Producer

SUPPORT FOR LAYERS

In the May "Buyer's Guide," a comparison chart stated that Micrografx Picture Publisher 8 does NOT offer support for layers. Versions 4 through 6 (my current version) do, and I can use multiple layers and move them around. Could layers have been left out of version 8, or was the author mistaken?

Peter Cowie
cowiepc@gte.net

The answer is the author was mistaken. We apologize for the error.

The Editors

CORRECTION

- In May's "Cyber Publishing," an incorrect image appeared next to Cosmo Software's Cosmo PageFX product announcement. Here is the correct photo.



TOOLS OF THE TRADE

The following products are used in the production of *PC Graphics & Video* magazine. All editorial content and images are created, edited, and made ready for printing on PC-compatible machines.

EDITORIAL HARDWARE:

Intergraph TD-225 233MHz Pentium IIs with 64MB RAM, 6GB hard drives, Matrox Millennium II graphics adapters, Intergraph 17-inch monitors, Ension audio boards, 24X CD-ROM drives, SupraExpress 3361 SP modems

PRODUCTION HARDWARE:

Intergraph TD-3 100MHz Pentium workstations with 64MB RAM, 21-inch monitors, 4X CD-ROM drives, and 1GB hard disks; an Intergraph TD-3 100MHz Pentium system with 128MB RAM. Other systems include 66MHz Intel 486 clones with 64MB RAM, #9GXE graphics adapters, ViewSonic PT813 21-inch monitors, HP SureStore CD Writer Plus 7110e, SyQuest Syjet 1.5GB drives, and Iomega Zip and Zip Plus drives.

SOFTWARE:

QuarkXPress 3.32, Microsoft Windows 95, and Office 6.0, CorelDRAW 7.0, Kai's Power Tools 3.0, Optima Technology XChange for Windows, Adobe Illustrator 7.0, and Photoshop 4.0. In the course of a typical production, editors and artists will test and use a variety of other software and hardware.

HOW TO REACH US

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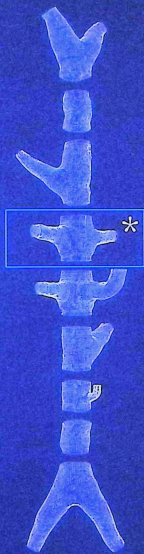
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FEEDBACK

clothing. White is not a very good idea, either, as most white fabrics have a lot of blue in them. Plus, white will tend to reflect the blue background and also will give you a hard time when setting the exposure on your camera.

Paulo de Andrade
Contributing Editor

WEB PIRACY

I enjoyed the May "Final Frame" column on Web piracy. It certainly does need addressing. I also wanted to let you know of a particular incident here in our area that came to mind at your mention of a company suing a 13-year-old. A story was reported in our local paper in Allentown,

PA—*The Morning Call*—about a boy whose nickname is Pokey (because he has a habit of dawdling) who has a Web page at "pokay.org."

The site became the target of a lawsuit by the company that owns the Gumby trademark and his horse Pokey.

The story has a happy ending when the creator of Gumby, Art Cloakey, comes to the kid's defense.

The article ran April 22 and can be accessed at www.mcall.com.

Bob Agonis
Ragonis@fullerco.com

SETTING A STANDARD

In regard to the June editorial ("A Moral Certainty," pg. 4), the problem with letting the market

decide our fates in the computer industry is that it doesn't work like markets in other industries with greater standardization. Telephones, CD players, and any battery-powered devices are examples of products that can be innovative due to a certain base level of standardization. This standardization, when not controlled by one monopolistic corporation, allows other companies to innovate with the standardized technology and create even better machines or applications for the base technology.

Microsoft is as successful as it is because it now "owns" the rights to something that should be a universal standard: a Windows-based operating system. The company has been releasing updated versions of this system that, until now, have never been as innova-

tive as the first Xerox or Macintosh. The market allows Microsoft to get away with this. It's not like we have a choice in the matter—no one else makes a fully compatible OS that can fully interface with Windows! So we have to buy Microsoft's, regardless of the quality.

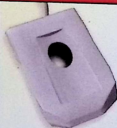
I foresee a time when an OS (or components thereof) becomes standardized to allow for greater innovation. Until then, Microsoft can continue to dominate the market due to its large presence rather than because of its product superiority.

It would be interesting to see how good Microsoft's OS would be if it truly had to compete on an equal level with other innovative corporations.

Kristofer Layon
layon@btr-architects.com

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JULY 1998

3D Animation Report Ranks Video Games As No. 1 Application Softimage Accounts For 36 Percent Of \$57.2 Million Market

Game developers bought the most 3D animation software in the United States last year, making it the largest market in the \$185.6 million industry, according to an analyst's report.

looks at more than 40 3D animation packages—many of which will be shown off at this month's SIGGRAPH trade show in Orlando, FL—and their use in six vertical markets: video games, broadcast/motion pictures, Web page development, modeling, corporate applications, and training.

According to John McCormick, author of the report, the video games market is so hot right now that it will continue to account for the lion's share of the industry for at least another year.

"If you look at the way games have been developing, there really hasn't, in the past, been a lot of 3D animation—it was mostly 2D action," McCormick said. "But the games are developing now and becoming more mature."

The broadcast/motion picture market made up the second-largest industry segment, generating \$54.1 million in sales revenue in 1997, according to the report. The top three software vendors here, respectively, were Softimage; SGI's Alias/Wavefront, which offers PowerAnimator for SGI and the recently

- Analyst's report tracks 3D animation software market
- Apple acquires technology from Macromedia
- Windows-based REALmagic NetStream cards power kiosks
- Microsoft, Intel back 3D file format from MetaCreations

MACROMEDIA TECHNOLOGY TO BE ROLLED INTO QUICKTIME No Plans Disclosed For Its Exact Use

The next version of QuickTime will feature technology from Macromedia, but Apple Computer executives are not disclosing the nature of the technology or exact plans for its use.

"We can't go into details at this time," Apple spokesman Russell Brady said.

Macromedia spokeswoman Mary Leong also would not discuss the specifics of the deal.

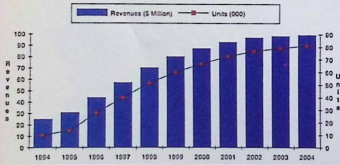
"The official word is that Apple acquired some technology from us," Leong said.

Industry sources believe the technology is Final Cut, a QuickTime-based video editing tool that never made it to the market.

"What we're officially saying about Final Cut is that our video technologies are outside of Macromedia's focus right now, which is the Internet," Leong →

Chart 4.2

3-D Animation Software Market for the Video Game Industry:
Unit Shipment and Revenue Forecasts (U.S.),
1994-2004



Note: All figures are rounded; the base year is 1997.

Source: Frost & Sullivan

The latest Frost & Sullivan report cites game developers as the largest group buying 3D animation software.

Of the \$57.2 million in animation software purchased by game developers, more than 36 percent of it was from Softimage, which offers Softimage 3D and Softimage 3D Extreme on both Windows NT and Silicon Graphics platforms.

The "U.S. 3D Animation Software Market" report by Frost & Sullivan

released Maya for SGI and NT; and Kinetix, which offers 3D Studio MAX on 95/NT.

Web page development, which McCormick predicts will become the No. 1 application for 3D animation by the year 2004, ranked No. 3 last year with \$29.2 million in revenue. →

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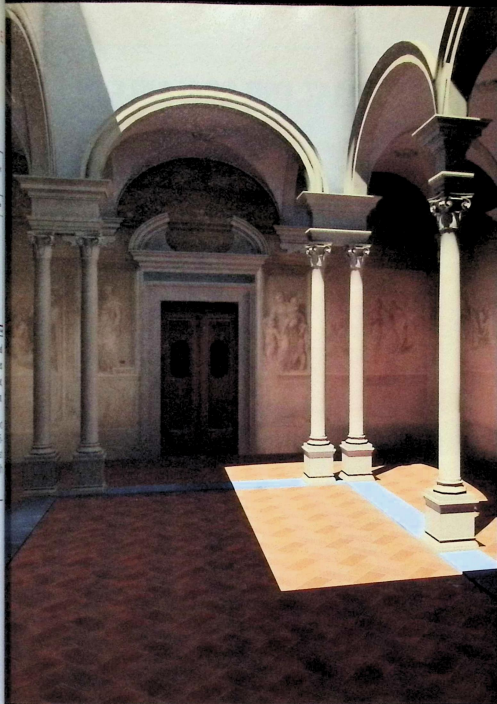
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James G. Jones
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• **NetStream Powers Wal-Mart Kiosks**

The 6,000 REALmagic NetStream MPEG-2 video playback boards that Wal-Mart has purchased from Sigma Designs are in use in almost 2,000 stores nationwide in an interactive kiosk display. The display enables shoppers in the electronics department to preview videos and audio CDs prior to buying them. The networked video application is run by PC-based servers and clients custom configured by Dell.

• **Radiosity Renderer Licensed by Caligari**

The next version of Caligari's trueSpace will feature LightWork Design's LightWorks rendering engine at a \$595 product price point. "Getting radiosity into trueSpace is going to rock a lot of people's worlds," spokeswoman Mon-rese Etienne said. LightWorks' scalable 3D rendering toolkit is used in more than 60 software applications worldwide, according to the company. trueSpace's 3D capabilities include real-time metaballs, plastiform, and DirectX input and output.

• **S3 Technology Selected by Microsoft**

Microsoft has licensed S3, Inc.'s Texture Compression algorithm for use in DirectX 6.0. The technology maintains image quality while compressing texture data up to one-sixth its required space. As a result, game developers will be able to use the PC's bandwidth and remaining storage for graphics files. According to Microsoft, the combination of AGP and S3's TC will increase bandwidth as much as 24 times. In other S3 news, Hercules Computer Technology this month will

3D FILE FORMAT FOR SCALABLE, STREAMABLE GRAPHICS INTRODUCED

MetaStream 3D Gets Key Industry Supporters

MetaCreations has garnered the support of Intel and Microsoft in developing a new 3D file format for scalable, streamable Web graphics.

The file format, called MetaStream 3D, will enable content creators to produce complex 3D objects for both the Internet and CD-ROM applications that maintain their quality regardless of the user's modem speed.

Intel's "progressive download" technology is a key element of the MetaStream 3D file format. It enables a streaming 3D object to come into view immediately as it fills in over time. The chip maker has agreed to help develop the Intel Architecture-optimized MTS format.

Meanwhile, Microsoft executives said they will incorporate the MetaStream 3D player into future versions of Windows, and will support the MTS format within the DirectX API and NetShow's ASE.

MetaStream 3D also incorporates technology from Real Time Geometry of Princeton, NJ, which provides developers with scalable imaging capabilities and multi-resolution control over their graphics. Developers



A MetaStream 3D object maintains quality regardless of modem speed.



can create 3D environments in which objects in front of the scene are of a higher quality than objects in the background; or they can program the level of detail to decrease as more objects appear onscreen, according to the company.

"One of the key issues holding back 3D on the Internet is that your experience is wildly dependent on both modem speed and CPU power," said Bob Rice, vice president of strategic affairs at MetaCreations. "This isn't just a stupid pet

trick. It's a fundamental issue." MetaCreations' spokeswoman Teresa Bridwell said the company is aiming MetaStream 3D at online shopping sites, video games, e-commerce, and distance learning applications. It is supported in Ray Dream Studio 5, Ray Dream 3D, and Infini-D 4.5.

The MetaStream 3D viewer plug-in is available at www.metastream.com. Minimum system requirements are a Pentium processor, a 28.8k modem, and Netscape or Internet Explorer 4.0 browsers.

—Amy Woods

NT-Based PressView Color Calibration Workstation by Intergraph and Radius

Offers Solution for Graphic Arts, Prepress Markets

A color calibration system that previously was only available to Macintosh users has come onto the Windows NT market.

The Radius PressView display has been bundled with the ExtremeZ ViZual Workstation from Intergraph Computer Systems, offering color management features to the graphic arts, prepress, and publishing industries.

Color calibration is not a feature on conventional monitors, which means shades and tones that appear onscreen are not true to life, said Josh Weisberg, marketing director for Intergraph's publishing and prepress division. "You can't trust the color because it hasn't been calibrated," Weisberg said. "You have no way of knowing if your monitor is accurate."

The ExtremeZ ViZual Workstation also offers Intergraph's "Mac-Friendly" suite of tools, which enable file transfers and the reading of disks between the platforms.

"The most popular solution has been PressView on the Mac," Weisberg said. "We wanted to provide our Windows NT users with a solution they could trust."

—Amy Woods

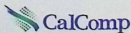


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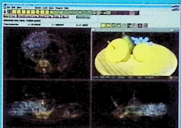
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INFOBYTES CONTINUED

ship its Terminator BEAST graphics accelerator, which incorporates S3's Savage3D chip. The 128-bit chip delivers 125 megapixels per second and more than 4X AGP performance through its newly designed AGP engine and Micro-soft-endorsed TC technology, according to the company. The 8MB Terminator BEAST will list at \$199.

VRML Tool Purchased By Sculptware

Sculptware, LLC, a 3D software company based in Williamstown, MA, has acquired the SiteSculptor application and will ship a new version of the VRML tool this summer, according to the company. Possibly



shipping this August, the tool will offer more than 75 new features and functions including wireframe geometry, NURBS, a multiple view-port interface, and a new key frame animator, the company said. SiteSculptor 1.0 was developed by MCS, Inc. (formerly CadKey) of Windsor, CT.

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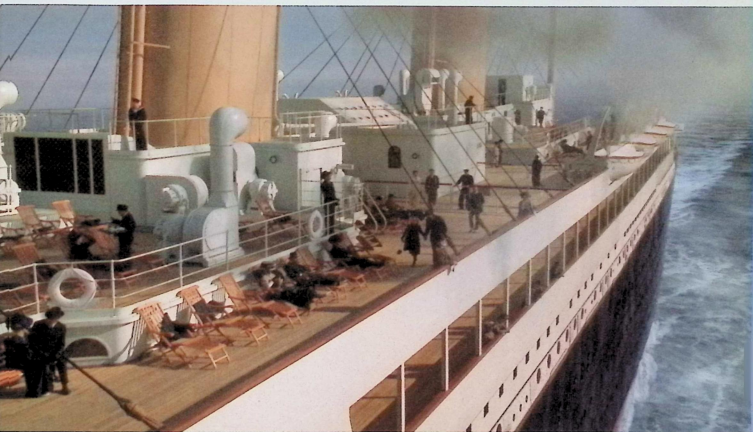
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LightWave 3D 5.5

/// Titanic really shows what computer animation can do for a film. We're very proud of it. ///



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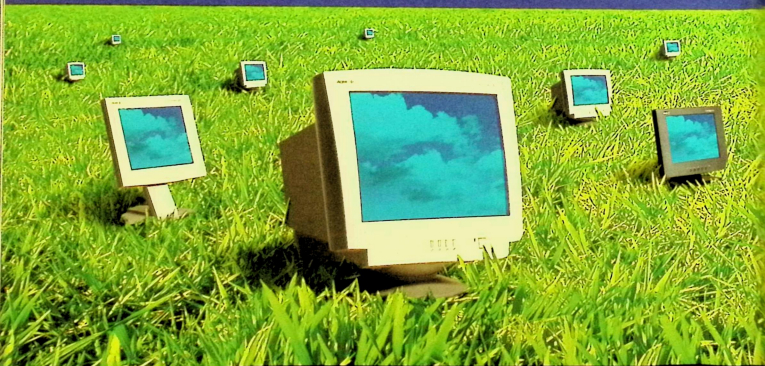


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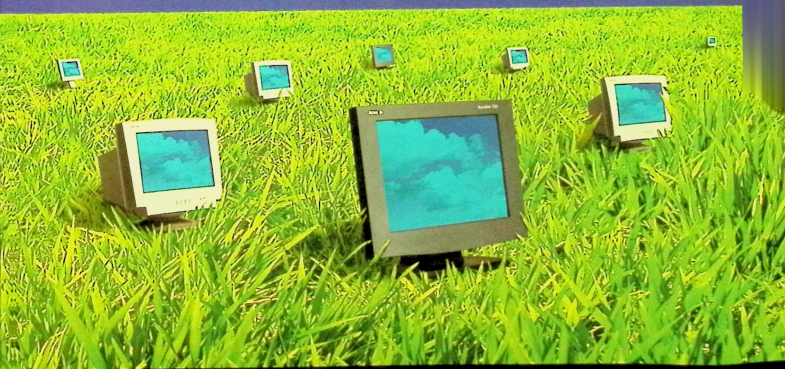


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After more than a year of anticipation by digital media producers, Apple's QuickTime 3 has arrived, bringing with it the power to change the way developers create and present multimedia. QuickTime 3 for the first time enables Windows 95 and NT users to create QuickTime multimedia with virtually the same depth and options previously accessible only to Macintosh users. A slew of improved, intelligent features open up

The most compelling reason to use QuickTime: its ability to provide a dynamic multimedia product that automatically delivers the optimum quality possible to each Internet user.

new levels of artistry for both the casual and professional developer, and greatly improves the quality and convenience of the multimedia content available to Internet and CD-ROM users.

QuickTime is not an application—it's an enabling technology. Introduced in 1991, QuickTime initially facilitated cross-platform digital video viewing only, eventually adding audio, text, animation, 3D objects, and MIDI music to its list of readable formats. QuickTime's capabilities have steadily expanded over the years, and it is now referred to as a media layer—at its base, a file format that enables content creators to save digital video, audio, VR panoramas, 3D objects, and text, and view them through the QuickTime plug-in. Built upon that base are other features that allow users to edit, compress, process, and play back all types of digital media.

**For
The
W
B**

QuickTime

By Dan Taylor and Christie Price

Illustration by

THE INTERNET STANDARD

QuickTime is rapidly becoming the technology of choice for video and Web site creators, and has gained widespread user and industry support. Boasting an installed base of more than 50 million PC users, it is by far the most widely adopted multimedia standard in the world. According to Apple, more than 85 percent of the multimedia content on the Web can be viewed through QuickTime.

The International Standards Organization recently adopted the QuickTime file format as the foundation for the Moving Pictures

Who's Using QuickTime?

QuickTime is used everywhere that multimedia is: in more than 85,000 CD-ROMs and innumerable Web sites. You can find it used in movie trailers, recording industry clips, game demonstrations, online retail sites, and virtual walk-throughs of real estate, cruise lines, hotels, and travel destinations. Check out the examples below to see how QuickTime is being used to create compelling Internet content; the results are impressive.

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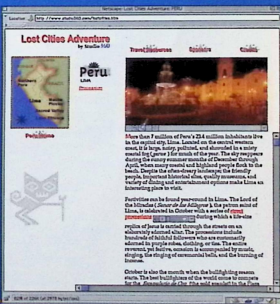
Studio360 produces original content for commercial projects used in Web sites and CD-ROMs.

Our most recent project, "The Lost Cities Adventure," featured a first-hand virtual exploration of the ancient ruins of Peru, including Machu Picchu and the center of the Inca empire, Cusco.

In building "The Lost Cities Adventure" site (www.studio360.com/lost.htm) Studio360 incorporated QuickTime 3 audio and text and QuickTime VR 2 panoramas and object movies.

All movies and panoramas are multi-data rate and streaming, and automatically send the appropriate movie version based on user connection speed or plug-in. Movies are compressed in Terran Media Cleaner with Sorenson, QDesign, and Cinepak codecs.

QuickTime 3 and its new codecs allowed us to →



Author Dan Taylor took this photo of Peru's Machu Picchu using a Nikon F-4 with a 15mm lens, to make a QuickTime VR panorama. ©1998 Dan Taylor/Studio360



Above: QuickTime audio and QuickTime VR objects and panoramas embedded into "The Lost Cities Adventure" Web site. Visitors can navigate through panoramas. ©1998 Studio360

Who's Using QuickTime? . . . continued

At right: Another shot of the "The Lost Cities Adventure" Web site.
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maintain the same quality of content while reducing our source file sizes by up to 30 to 50 percent.

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This allows more users to see our content in its optimum form.

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NoiseTank was conceived in November of 1997 as a collaboration of people with creative talents and a desire to publish their work in a non-commercial environment.

The noiseTank site can include anything from musical clips to video theater to discussion forums.

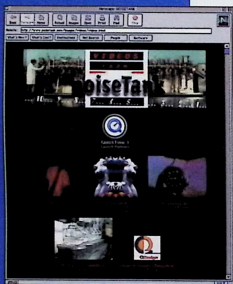
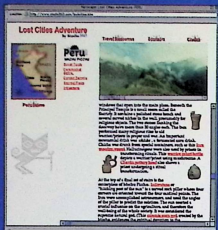
Their work, currently featured in The QuickTime Showcase, exhibits engaging examples of the audio and video capabilities of QuickTime 3. (See www.noisetank.com/images/videos/videos.html.)

To create multimedia products, noiseTank uses QuickTime 3 Pro, Terran Media Pro 3.0, Sorenson Video, and QDesign Music Codec. A 200MHz dual Pentium with 64MB RAM handles development and encoding.

The noiseTank crew is pleased with the performance of QuickTime 3. NoiseTank principal Mat Brown discusses the developer features of QuickTime 3 Pro:

"I am blown away at the audio quality of QDesign Music, and I consider it to be the leader in audio compression for the Web. I find that Sorenson Video works extremely well at mid to upper bit rates—from 56k to 11k."

"The compatibility of the codecs, plus the ability to stream movies from an HTTP server, makes QuickTime 3 an indispensable tool in delivering our multimedia content." —Dan Taylor



Above: The noiseTank site features QuickTime VR video and audio content. The sample RESERVOIR illustrates the differences between QuickTime 3 and RealVideo. ©1998 noiseTank

Expert Group's next major digital media standard, MPEG-4. In doing so, the ISO cited market research data that estimates more than 81,000 Web sites currently run QuickTime.

The growing prevalence of QuickTime as a universal multimedia file format assures content creators a uniform development platform with staying power. Several software applications have joined the party by acquiring QuickTime compatibility. Microsoft Word, Macromedia Director, and Terran Interactive's Media Cleaner are only a few of the applications that can now read, write, or play QuickTime files.

SMALL PRICE, LARGE FILE SIZE

Like all previous versions, QuickTime 3 is free, though the developer features are available only by upgrading to the Pro version. The basic package kindly reminds you of this option when QuickTime is launched for the first time. If you want to enjoy QuickTime's superior authoring capabilities, the \$29.99 Pro upgrade is a worthwhile purchase (see sidebar, page 36). The whole QuickTime 3 package adds up to a hefty 6.8MB file size, which is daunting to casual users attempting a download from the Apple Web site. According to Apple, QuickTime will also be accessible through promotional CDs, and will be pre-installed on some new PCs.

RICH, QUALITY CONTENT

QuickTime 3 allows users to create diverse multimedia experiences weaving together video, audio, text, and 3D with precise control. The results are some of the highest quality products you'll see on the Internet.

A central component of QuickTime is MoviePlayer 3.0, an application that opens and plays dozens of multimedia file types. The Pro upgrade includes MoviePlayer Pro, which gives you the ability to save and edit movies, convert other file types into QuickTime, and re-compress and reorganize content. With MoviePlayer 3.0 you can create a variety of movies by combining digital video, synchronized text, sprite animation, 3D animation, digitized sound, or MIDI music.

MoviePlayer 3.0 also enables you to import an extensive variety of media files, including nearly any audio, animation, and graphics format available on the Internet.

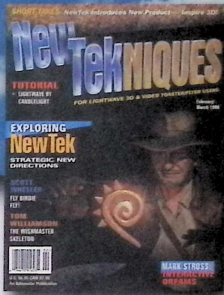
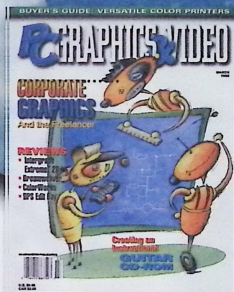
Still images are manipulated by the QuickTime Picture Viewer. The Pro version can rotate, copy, and paste images, as well as export them into BMP, JPEG, Photoshop, PICT, or QuickTime formats and save them.

For 3D images, QuickTime offers QuickDraw 3D. QuickDraw 3D integrates 3D graphics technology into the PC operating system for the first time, enabling you to incorporate 3D graphics into your documents and QuickTime movies as easily as 2D graphics.

An abundance of other useful tools are available in the Apple QuickTime Web site developer section. A particularly useful one is "Make Effect Movie." This tool includes several effects that are applied to movies in real time: One applies filters that adjust noise, emboss, sharpen, or blur; another adds fading, imploding, or gradient transitions. The application of the effects in real time keeps the file size small, but also means that viewers without the QuickTime 3 plug-in will not see the effects.

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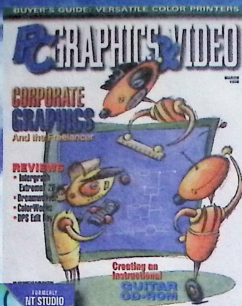
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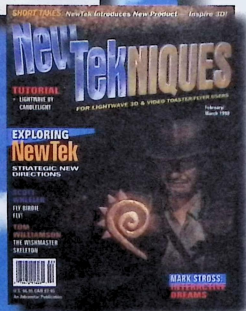
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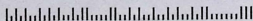
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Hardware Lab Report, March 1999, BYTE

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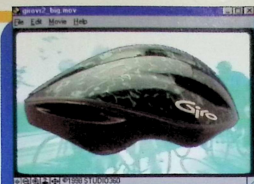
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TECHNOLOGY ALLIANCES INCREASE VALUE

Apple has licensed technology from several companies to beef up QuickTime 3's capabilities. Several audio and video codecs included in the Pro version endow it with maximum compression capabilities and excellent playback quality with low bit-rate modem connections. The Sorenson Video codec provides compression superior to the traditional video codecs, while maintaining an extremely small file size. Intel's Indeo Video 4.4 codec, included in QuickTime for Windows only, offers data-rate controls, scalability, transparency, and access key options.



The QDesign Music codec provides truly amazing audio compression—it can reduce an 11MB CD audio file to as small as 150KB. Qualcomm PureVoice compression technology delivers high-quality voice-based content at any modem connection speed.



At left: The Giro helmet, is a rotating QuickTime VR object movie shot with the Fuji DS-300 digital camera. The control bar includes new features of the QuickTime Move Player, in order from left to right: hotspot return, zoom out, zoom in, show hotspots, and object moving. © 1998 Studio360.



Above: Giro helmet source files illustrating the movement of the object. It was photographed at various degrees of rotation and combined into a QuickTime VR object movie.

DV Editing Rises to the Challenge

With the advent of QuickTime 3 Pro, software programmers around the world have been scrambling to deliver programs that are not only compatible with the new QuickTime, but that also push its limits. Non-linear digital video editors can breathe easy—with updates available for many major editing programs, and QuickTime 3 cross-platform functionality, everyone is sure to benefit.

According to Adobe, Premiere 5.0 allows you to take advantage of everything QuickTime 3 has to offer. Its open architecture enables third-party plug-in support, giving you the flexibility to work with almost any additional tool. Premiere 5.0 also offers complete compatibility across Windows 95, Windows NT 4.0, and Power Macintosh systems, so you can share files easily in mixed-platform environments for real-time playback and editing.

Although Radius says that its own codec in EditDV produces higher quality rendering, the company encourages you to use the QuickTime 3 codec for

real-time playback and editing—in fact, the software's default settings come set up this way.

Being fully compatible with QuickTime 3 Pro, EditDV allows all still image formats that are supported by QuickTime 3 Pro to be imported and treated as ordinary video layers.

Media 100's qx 4.5 is also fully compatible with QuickTime 3 Pro, including the ability to drag-and-drop Media 100 qx media files to other QuickTime applications using the QuickTime codec.

Ulead's MediaStudio Pro 5.0, another non-linear video editing solution for Windows 95 and NT 4.0, has QuickTime 3 read and write capability. Ulead says that it is working on a new version of MediaStudio Pro, which will support the additional formats offered in QuickTime 3, as well as some of the transition effects and other new features that it brings to the market.

With these and other software updates on the way, digital video editing may finally enjoy the benefits of being truly cross-platform.

—Maya Cointreau

Roland Corp.'s Sound Canvas sound set, a MIDI-based extension, provides a rich library of 128 built-in instrument sounds, and allows custom-designed instruments that can replace or augment the predefined set.

BRINGING THE WORLD TO THE VIEWER

QuickTime VR (Virtual Reality) is the QuickTime component that places viewers in a virtual world, allowing them to freely navigate within 360-degree panoramas, and spin object movies around at will. QuickTime 3 includes a host of QuickTime VR improvements, not the least of which is combining the QuickTime VR plug-in with the QuickTime plug-in. A greatly enhanced viewer control bar facilitates easy zooming, highlights hot spots that link multiple panoramas in a scene, and includes a dialog box for accompanying text.

VR authoring tools available in the Apple QuickTime Web site developer section allow some manipulation of QuickTime VR panoramas and object movie content. "VR Make Pano" takes a 360-degree image and saves it as a QuickTime VR panorama. The "VR Make Object" option saves a linear QuickTime movie as a QuickTime VR object movie. Windows users are not yet, however, able to use the QuickTime VR Authoring Studio 1.0. The Authoring Studio (not a part of QuickTime 3) can create VR panoramas from multiple images and perform other more advanced tasks.

MAKE YOUR MULTIMEDIA THINK LIKE A VIEWER

The QuickTime plug-in lets viewers see and hear video and audio from the Web within the Netscape and Internet Explorer browsers. However, with the wide variance in modem connection speeds, creators are stymied by the quality-versus-convenience dilemma.

This dilemma points to one of the most compelling reasons to use QuickTime: the ability to provide a dynamic multimedia product that automatically delivers the optimum quality possible to each Internet user, according to individual system capabilities. Multi-data rate movies, streaming technology, and advanced codecs work together to create a full-featured media experience that doesn't overwhelm you with impossible download times.

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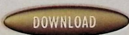
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Basic and professional system specs

QuickTime 3 and QuickTime 3 Pro
Apple Computer, Inc.
Infinite Loop
Cupertino, CA 95014
(408) 996-1010
www.apple.com
Circle & FASTRAK #165

Minimum system requirements:
Windows 95 or NT 4.0; 486
DX-based computer at 66MHz
or faster; 16MB RAM. Win-
dows 3.1 is supported with
QuickTime 2.12.

- **File size:** 6.8MB
- **Basic components:** viewer plug-in; Movie Player; Picture Viewer; QuickDraw 3D
- **Capabilities:** cross-platform support; opens and plays video, audio, VR, 3D, and text files

• **Pro version enhancements:** creates movies from existing content; adds special effects to movies; compresses video and sound using new, state-of-the-art codecs; exports videos, sounds, and pictures to more than a dozen file formats; extracts specific movie tracks for additional editing; saves movies from Web sites

- **Price:** basic package is free; upgrade to Pro version costs \$29.99
- **To order:** download from www.apple.com/quicktime/; or call (888) 295-0648.

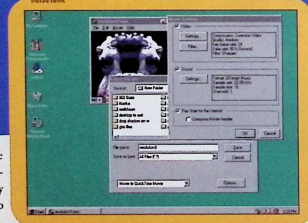
Sorenson Video codec
Sorenson Vision, Inc.
1011 W. 400 North
Logan, UT 84321
(888) 767-3676
www.s-vision.com
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- **Capabilities:** cross-platform support, data rate control, frame rate control, frame size control, fixed quality options, key frame intervals support

• **Developer edition enhancements:** auto key frame, flexible data rate tracking, media key support, temporal scalability, custom watermarks

- **Price:** basic edition included with QuickTime 3 Pro; developer edition costs \$499
- **To order:** download the developer edition from www.s-vision.com; or call (888) 767-3676.

Below: Sorenson Video codec and QDesign Music codec are used to compress noiseTank's "Resolutions" movie. ©1998 noiseTank



The multi-data rate movie allows one source movie to reference other movies that may have a larger file size, cater to an older QuickTime plug-in, include sound or digital video, or contain multi-language audio or text. The QuickTime 3 plug-in will automatically determine which of the reference movies to send, based on user connection speed, plug-in, language preference, or by order of preference determined by the creator. The process is invisible to viewers, who are spared the ordeal of having to determine which button to click to receive a multimedia version compatible with their viewing system. Web site developers will appreciate not having to create separate pages to accommodate different viewer capabilities.

Other features improve the viewing experience by considerably lessening the wait time. By saving a QuickTime movie as a streaming movie (using the "Fast Start" option), users begin enjoying the

QDesign Music codec
QDesign Corp.
201-1107 Homer St.
Vancouver, Canada V6B 2Y1
(604) 688-1525
www.qdesign.com
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- **Capabilities:** cross-platform support, streams 44.1kHz stereo sound in real time over a 28.8k modem, encoders accessible through any applications supporting QuickTime 3, including QuickTime Pro and Media Cleaner Pro

• **Developer edition enhancements:** twice-as-fast encoding performance, extended range of bit rates, intelligent level detection and control, audio source optimizations, advanced perceptual coding parameters

- **Price:** basic edition included with QuickTime 3 Pro; professional edition costs \$399
- **To order:** download the professional edition from www.qdesign.com.

Media Cleaner Pro 3.0:
Terran Interactive, Inc.
15951 Los Gatos Blvd, Ste. 6
Los Gatos, CA 95032
(800) 577-3443
www.terran.com
Circle & FASTRAK #168

Media Cleaner Pro 3.0 integrates the features of QuickTime 3 Pro and the Sorenson and QDesign codecs, and is a must-have for multimedia developers

- **Capabilities:** cross-platform support; variable bit-rate encoding (VBR) of the Sorenson codec support for watermarking, media protection keys, and batch support, ability to create alternate movies

• **Price:** \$359. QuickTime 3 Pro is included in purchase price; a bundled package including Media Cleaner Pro 3.0, the developer version of Sorenson Video, and the Pro version of QDesign Music codec costs \$1,099

- **To order:** download from www.terran.com.

content immediately while the movie continues to load. A streaming QuickTime VR panorama will display as a preview version that allow users to immediately begin moving within the panorama while the image becomes progressively sharper. Unlike other streaming technologies on the market, QuickTime's has no limitations on the number of users that can simultaneously access a movie, and does not require a dedicated media-streaming server.

A POWERFUL MULTIMEDIA PRODUCT

QuickTime 3 ensures that PC and Mac users can reap the benefits of the world of Internet-based multimedia. Companies such as Time-Warner, CBS, and Volkswagen are using the technology for everything from promoting movies to selling cars. (See some great examples on The QuickTime Showcase at www.apple.com/quicktime.) The improvements in QuickTime 3 and QuickTime 3 Pro solidify QuickTime's position as a multimedia must. **PCGV**

Dan Taylor and Christie Price of Seattle, WA-based Studio360 (www.studio360.com) create QuickTime and QuickTime VR content for business and advertising clients.

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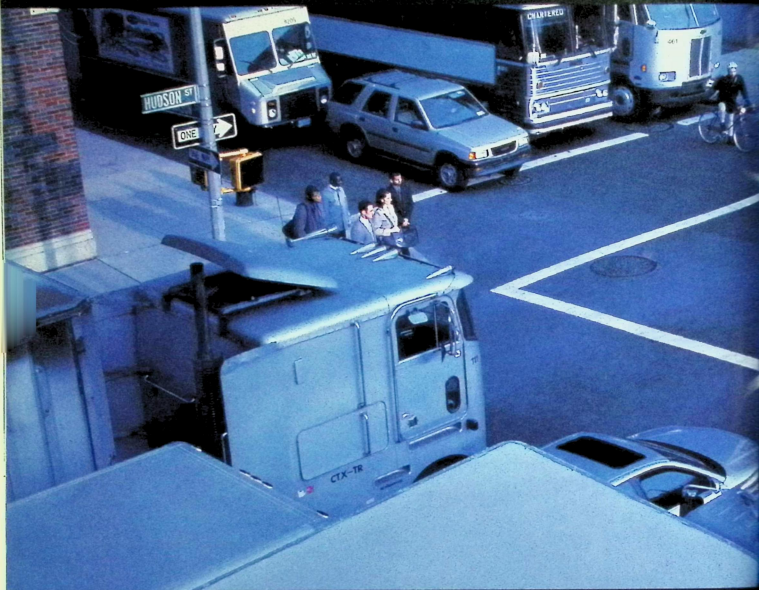
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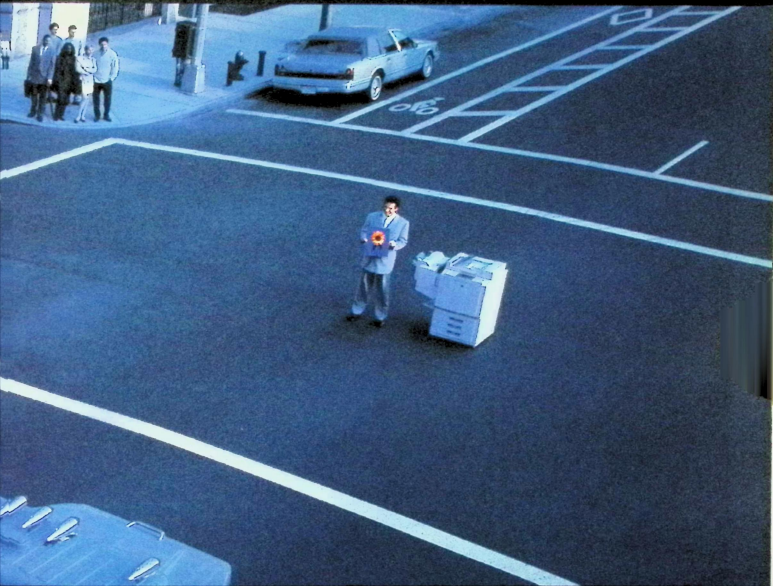
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TECHNIQUES

You will be surprised by how much can be accomplished with a little creative thinking.

Titles, Flying Manhole Covers, and UFOs for 'Really Strange Stories'

by Stefan Petrucha

If I have to explain why, you'll never understand, but awhile back, partner Steve Holtz and I decided to produce an ultra-low-budget, hour-long satire of paranormal television shows using a Pentium Pro-based Windows 95 PC. The result was "Really Strange Stories of the Totally Unknown," a tape that consists primarily of three segments: "The X-Wives," "Unresolved Mysteries," and "Invasion of the Balloon People." I'll leave it to the discerning reader to extrapolate the subjects of these satires.

The targets of our rapier-like wit used glossy, expensive special effects in their shows. To mock them, our little project called for ray-blasting UFOs, title sequences, and a deflating man.

We didn't set out to conquer the world with technical quality. In some ways, it's better to have cheesy effects in a satire—it adds to the humor. So, imagine our surprise when, during the premiere, several of

the effects earned not only laughter but also applause.

After reading this article, you, too, will be surprised by how much can be accomplished so easily with a little effort and creative thinking.

The major software savior encountered on our digital video Mecca was Caligari's trueSpace 2.0, which made 3D modeling—something that certainly sounds terrifying—a breeze. I used only a modest portion of this program's capabilities to achieve these effects. The screen captures shown here are from the latest version, trueSpace 3.0, but the interface is similar. I want to take a look now at three sequences created using trueSpace.

FUN WITH TITLES

Let's begin with something simple—a title. For the opening of "Unresolved Mysteries," I wanted to capture the look of the original

by having the word UNRESOLVED spiral into the center of a smoky background as though a powerful light source were behind it. The word MYSTERIES would then fade in beneath.

In trueSpace, all commands, or tools, are grouped as iconic expanding menus.

A right click on the Text tool allowed me to pick a font, after which I left-clicked and typed the word UNRESOLVED. A click of the Sweep tool gave the letters some depth. The Paint tool allowed me to quickly add textures and color.

But how to create that "light-beam" effect? I began by creating a copy of the word UNRESOLVED. To convert this copy into light rays, I clicked and held one of the Sweep vertices and deepened the word by a factor of 10. An ice-blue texture from the Texture tool completed the effect. Voilà—light rays.



Top: Agents Sox Molder and Zana Sully from "The X-Files" satire "The X-Wives."

At right: Agent Sully and the Loch Ness Monster.





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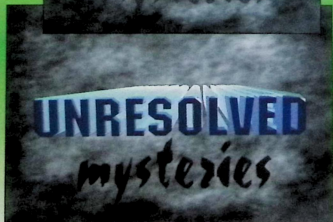
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TECHNIQUES

To animate the objects, I began by moving the thinner UNRESOLVED to the back of the light rays by selecting and dragging it. Once it was in position, with the word still selected, I clicked on the Animate tool to bring up the Animation Control Panel, where you set key frames for objects. Once the key frames are set, trueSpace fills the movement in between.

With the object I wanted in position and selected, I clicked on the key frame to establish the first key. Within two seconds of screen time, or 60 frames, I wanted the light waves to pass through the thinner UNRESOLVED and become visible on the other side. The number 60 was entered in the frame counter, the thinner UNRESOLVED dragged to its final position, and a new key frame created. A press of the Play button previewed the result.



Above: Video stills of the complete title effect "Unresolved Mysteries" in two phases.

In order to achieve the rotating effect, I used a virtual camera.

With trueSpace, you can animate these cameras the same way you animate objects, allowing control over the angle and motion of the scene.

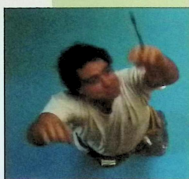
A click of the Add Camera Tool placed one of these virtual cameras in the scene. A smaller view also was added, showing the camera's perspective. Now all I had to do was get the camera to spin and pull out while the two UNRESOLVEDs went through their paces.

Different types of motion are added to objects or cameras as separate key frames. In other words, because I wanted the camera to move and spin, I first set beginning and ending key frames for the movement, then for the spin.

I dragged the camera to an extreme clasp of the light rays.

Deflating Dave

One of our more interesting effects didn't involve modeling, just a cagey use of some basic Adobe Premiere features. In "Invasion of the Balloon People," the hapless Jason from Accounting (Ed Madden)



Still images from the video "Invasion of the Balloon People."

stumbles onto a handyman (Dave Lane) inflating his apparently latex boss. The handyman quickly discerns that Jason is not part of the Balloon conspiracy and attacks. In mid-assault, he slips and pierces his hand with a screwdriver. Jason looks on in horror as the handyman deflates, rises, floats, and twists around the room like a sputtering punctured balloon.

The effect was achieved by shooting our actor blowing air out of his mouth and twisting around against a big blue sheet. Next, a tripod-locked shot of the office was taken, first empty, then with a real punctured balloon flitting about.

Using the chroma key, the blue screen (or in this case, blue sheet) footage was keyed over the empty office. By using the Motion and Zoom commands in Premiere, the handyman was made to recede and flit about. By using the Distortion command, I was able to bend and warp his image as he moved, creating the appearance of "deflating."

The end of the live balloon shot was then tacked on. In one of those lucky accidents, the exact moment at which the keyed, shrinking handyman is replaced by the balloon is actually impossible to discern.—**Stefan Petricha**

This was the first Movement Key Frame.

Using the Pivot Object tool, I flipped the camera upside down and made this the first key frame of the spin.

Next, I dragged the camera away so the word appeared in the center of the screen, set the final motion key frame (at 60), then pivoted it right side up for the final spin key frame (at 60).

All that remained was to render the sequence. I've achieved my best results using a series of Targa or

TIFF images. A sequenced image for each of the 60 frames is created and stored in a user-definable directory.

I then imported the Targa sequence into Adobe Premiere and placed it on the "Super" time line. An alpha channel was added automatically, so setting the Alpha Key produced perfect results.

A special note: Premiere automatically allocates one second to a still image when it's imported. The default can be altered so that one image appears per frame,

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which is the way you would want a Targa sequence, but this is terribly inconvenient if you plan on working with any non-animated stills—leaving them nearly invisible. I've found the easier thing to do is use Premiere's "Speed" command to speed up the sequence 3000 percent. This makes the animation appear at the correct rate without altering any defaults.

As for the rest, the word MYSTERY was created with a funky font in Adobe Photoshop, imported as a still, and faded in. Moving fog was created by importing a royalty-free image into Premiere, making a copy, then superimposing one on the other and adding a slow-motion effect to one of the images using the Motion Command. In the end, it looked pretty darn good.

THE FLYING MANHOLE COVER

Now for some fun stuff.

"The X-Wives" segment called for not one, but two close encounters with UFOs.

In the first, our heroes are driving along when Agent Zana Sully (Sarah Kinney) screams, "Look out!" Agent Sox Molder (Hector Hill) screeches to a halt, narrowly avoiding a strange object, affectionately known as "the flying manhole cover" (even though it's actually a six-sided polygon

with a little sphere in its center), which spins, flips, and takes off like a bullet into the otherwise quiet sky.

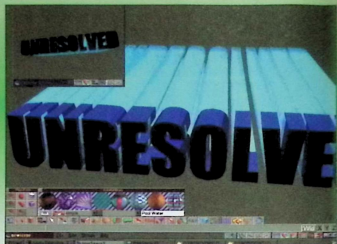
Agent Sully, not having seen the UFO, screamed because she was worried that Agent Molder was speeding. Everyone laughs.

How'd we do it? First, the live footage was acquired—a head-on shot of the car coming to a halt, followed by a pan up to the sky. In Premiere, the first half of the footage was sped up to give the impression the car was traveling at high speed. Next came the CGI element.

For my first attempt at creating an actual model, I wasn't going to try anything too complex. The simple controls of trueSpace 2.0 allowed me to create the UFO in less than 15 minutes, and most of that time involved scratching my head over aesthetic choices, like color, size, and shape.

The program enables the creation of a variety of primitives (spheres, cubes, regular polygons, and so on) to use as building blocks. By creating and manipulating these shapes, models of great complexity can be created.

Complexity wasn't my goal, though. Real flying saucer photos are blurry, distant, and show very basic shapes. So, with a simple click of the Regular Polygon tool, a six-sided plane appeared. A click of the aforementioned Sweep tool gave it depth.



Above: Screen capture from trueSpace showing a camera view of the completed model.

To make the model just a bit more interesting, I decided to add a small sphere to its underbelly. A simple sphere was brought down to size using the Scale tool, then moved into the center of the polygon and given an odd, brain-like texture.

I secured the sphere to the polygon with the Glue tool, ensuring they would act as one when animation was applied. The model was complete.

Once again, the sequence was rendered and imported into Premiere. After that, it was simply a question of alpha keying the saucer onto the live footage. The final bullet-like zip off into the sky was enhanced using Premiere's digital zoom.

THE MONEY SHOT

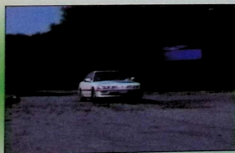
Actually, this is the sequence that, in ages past, would have cost big bucks—now it just looks like the money shot. Our real money shots involved prop-gun rentals and a red wig to make my wife

look like Agent Sully. Oh yeah, and paying a lawyer to make sure we weren't violating any intellectual property laws.

The scene: evening in the forest. Agent Sully is on her way to hunt for a giant chicken. Prior to her arrival, a UFO appears. Looking like a strange eye, it flips over to reveal a glowing, pointy underbelly. An energy device charges, a translucent red beam shoots out and pyrotechnically probes the forest floor. The beam retracts, and the ship flips back over and flies off. Agent Sully arrives, complaining, "There's nothing here."

Live video of trees and evening sky was shot, leaving a healthy sky-filled space for the model. A second shot gave us a view of the forest for the beam. In Premiere, both shots were tinted blue to create more of a nighttime effect.

The UFO model was again created in trueSpace. By now I hope you have some sense of how this was accomplished, so I'll



Above: Stills from the completed sequence of "the flying manhole cover," where the car screeches to a halt to avoid a strange object hurtling toward it.

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TECHNIQUES

simply say I combined two primitive shapes—a doughnut and a cone. Using the Deform tool, I squeezed the doughnut in the middle to make it more of an ellipse. I then gave it a rough, dark texture, except for the inner surface, which I gave a bright-yellow hue to create an engine glow. The cone was textured with a pinkish marble pattern.

Two sequences were created with the model. In the first, it flies sideways into the scene, giving it a 2D look. Then it stops and flips down to reveal its 3D character. In the second, the model flips once again, then zooms off into the eerie stillness of the night. The resulting Targa sequences were combined in Premiere with the live footage.

To create the charging energy device, two copies were made of the final frame. In Photoshop, a lens flare effect was added to one. In Premiere, the stills fade

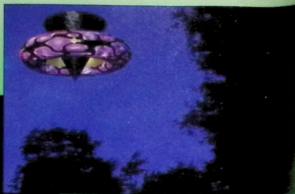


into each other and the lens flare slowly appears—our “device” charging.

Photoshop also was used to create a thin red line for the beam. Using a combination of a key and one of the standard Premiere wipes, the beam is made to “shoot” from the tip of the cone. The wipe is simply reversed to show the effect of the beam retracting.

The pyrotechnic probe of the forest floor is a bit more involved. In order for the beam to be translucent, part of the forest had to be visible through it.

Above: Video stills from the completed sequence illustrating the UFO sequence.



This was accomplished using a copy of our forest footage. In Premiere, this copy was tinted red and orange, and the brightness turned up.

Next, in Photoshop, I created a black frame with a thick alpha channel line in the middle. When this was keyed in Premiere with the tinted live footage, the alpha channel dropped out, leaving a reddish beam that matches the image of the forest against a black background.

I added motion so it would move from right to left across the forest still. This scene was rendered as a movie, which consisted of a red translucent beam moving against a black background.

Using the chroma key in Premiere, this footage was keyed onto our original forest shot. Since the shots matched exactly, the next effect was the translucent beam traversing the forest. Cool, but lacking depth.

To give it that extra something, a “searing” effect was added using another wonderful program, Meta-Creations’ Final Effects for Premiere, a collection of great filters that includes fog, smoke, and fire. The fire filter, which produces a spray of red and yellow sparks, was

added to our beam footage. The motion controls for this feature enabled me to make the searing follow the path of the beam.

Once the effect was complete, a careful use of audio effects (the hum of an engine, electronic clicks, and a sci-fi ray sound) brought the whole thing together.

THE WACKY FUTURE

I’m hopeful this article provided a glimpse of the possibilities for all those would-be Roger Cornmans, such as myself, out there. Our next project is going to be an even more effects-heavy outing called “Those Wacky UFOs.”

I’m looking forward to modeling and animating in trueSpace 3.0 and using Final Effects Complete for Adobe After Effects. Maybe we’ll even get out of the dinosaur age and upgrade to something with an MMX chip, or better yet, one of those FireWire cards. **PCGV**

Stefan Petruha is one of two members of Between the Lines Productions, LLC, a multimedia company devoted to the creative whimsies of its owners. He can be reached at petruha@realstrange.com. More information on “Really Strange Stories” can be found at www.realstrange.com.

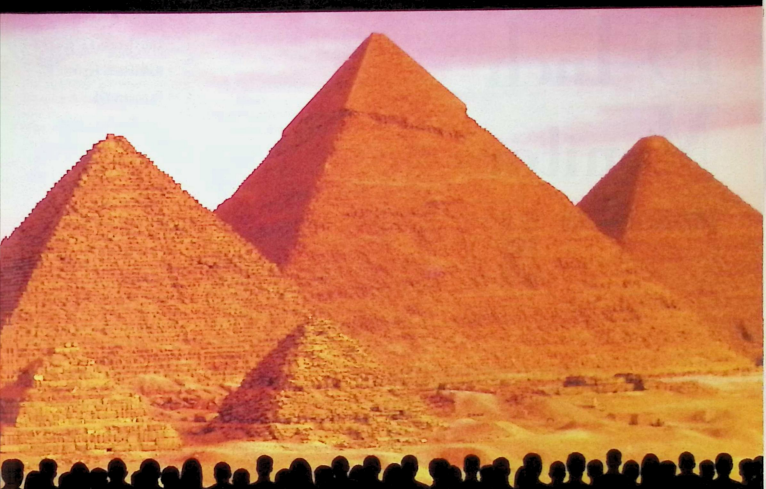


Above: A particularly nice still of the completed UFO sequence. **Left:** Screen capture from trueSpace showing the two primitive forms used to build the model.



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BUYER'S GUIDE

19-Inch Monitors

By J.V. Bolkan

This new class of monitor brings you the advantages of a larger screen without the hefty price tag.

Not since Microsoft's Windows 3.0 kick-started the sales of color VGA monitors has the display industry enjoyed anything like the excitement that the new 19-inch classification has created.

The overwhelming success of this new size is easy to understand. A large gulf previously separated 17-inch and smaller monitors from those in the 20- and 21-inch class. Price was a huge factor—in many cases the leap from a 17-inch to a 21-inch monitor resulted in as much as a threefold price increase. Performance was also a factor—the smaller monitors simply can't display all the pixels that modern graphics cards are capable of producing. If you needed actual 1280 x 1024 resolutions, you needed a larger display.

The 19-inch category bridges the gulf. Even the first models

were competitively priced with 17-inch monitors, yet the modest increase in screen size provides enough physical pixels to display higher-resolution images without interpolation.

In the months since Hitachi released the first 19-inch display, virtually every major display manufacturer has either followed suit or announced its intentions to do so. This has resulted in a free fall in prices for both 17-inch monitors as well as 20- and 21-inch models.

The eventual successor to traditional CRT displays, the flat-panel LCD, is on the market. However, despite falling prices and improved quality, the best picture is still produced by a tube. Current LCD displays are relatively expensive, but more importantly, they are limited to the lower resolutions.

Most LCD displays can show no more than 1024 x 768—a far cry from the 1600 x 1200 that is standard for most professional-level displays.

The first 19-inch monitors were designed around Hitachi's tube and featured traditional shadow-mask technology.

PRODUCTS REVIEWED

- Acer AcerView 99c
- ADI MicroScan 6P
- Eizo Flexscan FX*D7
- NSA/Hitachi Supreme 752
- Optique V95
- Sony Multiscan 400PS

Recently, the popular aperture-grille technology typified by Sony's family of Trinitron monitors also has become available in the 19-inch form factor.

Already, second-generation versions of 19-inch monitors are appearing, led by Hitachi's 752—a more professional-level companion to its original 751.

With 17-inch monitors quickly becoming entry-level commodity products and 21-inch professional monitors finally dropping well below the \$2,000 threshold, 19-inch units aren't the incredible values they were just a few months ago. Still, they have carved a niche and deserve consideration both as upgrades to smaller displays and affordable alternatives to larger units.

Among the group of six units we evaluated, the picture quality was very high. The main differences seem to be price, which was most often determined by feature sets, and in some instances, clock rates.

All the monitors are capable of 1600 x 1200 resolution, but some produced more stable images at that setting. Depending upon your specific needs, any of these monitors might be the right choice; therefore, we found none that we couldn't at least recommend and took the unusual position of highly recommending the majority that we looked at.



At right: The AcerView 99c can run at resolutions as high as 1600 x 1200 at 75Hz.

ACER ACERVIEW 99c



At \$649, the 18-inch (viewable) AcerView 99c is the least expensive monitor in this group. The 99c also proves the point that you often get what you pay for and you can't always rely on a spec sheet.

Although the price is very good, adding the optional USB 4-port hub will bring the actual cost very close to the ADI MicroScan, another low-cost entry reviewed here. Despite the low price tag, the 99c has a number of impressive specs.

As with all the monitors in this "Buyer's Guide," the 99c can run at resolutions as high as 1600 x 1200, and like most of them, it is limited to only 75Hz refresh rates at that setting. A 0.26mm dot-pitch shadow-mask tube provides smooth raster performance.

Although the 99c did very well on our tests, its picture seemed coarser than the others, if only slightly.

More importantly, the 99c exhibited a tendency for the entire screen to waver, probably a result of receiving interference from the test computer. Although all the monitors exhibited some signs of this, the 99c exhibited the effect far more consistently.

Controlling the monitor is relatively simple, thanks to an on-screen menu system and four large, easy-to-access buttons on the front panel.

The 99c has a distinctive design. The front bezel is oversized and curved slightly, giving the impression that the screen is much larger than it is as well as giving the image onscreen a faint keystone effect even when one doesn't exist. Adjusting geometry effects is possible, but the monitor doesn't have moiré reduction, or more importantly, color controls.

The price is certainly right, and the spec sheet looks pretty

impressive. Unfortunately, the whole is less than the sum of its parts.

If you are looking for a cut-rate deal on a large-format monitor, this fits the bill, but there are better options in the general price range.

Pros: Very inexpensive, good image quality.

Cons: Possibly prone to interference, shallow control menu.



Above: The ADI MicroScan 6P sports a host of controls, including pinbalance and overscan settings. **Right:** The Eizo FlexScan FX'D7 comes with a three-year warranty.

ADI MICROSCAN 6P



ADI's MicroScan 6P, with its 18-inch viewable area, reasonable \$769 price, and built-in USB ports only reinforces the price and performance benefits of this size monitor.

Price and fancy multimedia features don't mean much if the picture quality is substandard. Fortunately, the 6P delivers professional display performance. The 6P offers a feature set that rivals many low- and even some mid-level 21-inch monitors. The 202MHz bandwidth enables 1600 x 1200 at a relatively stable 75Hz refresh rate. At 1280 x 1024 and 85Hz, the monitor is at its optimal settings.

The 6P's Invar shadow mask provides a relatively bright, high-contrast picture, but its real strength

is fine raster performance. The 6P showed very good focus, convergence, and color purity across the entire screen. Even in the highest resolutions, the monitor showed no obvious display problems.

Controlling the monitor is relatively simple. Old-style analog adjustments for brightness and contrast are discreetly located under the front bezel.

Other controls, such as geometry, moiré reduction, color temperature, and power management are adjusted through an on-screen menu (OSM) system. Three tiny buttons give access to the OSM, control is precise, and the menu layout is logical and easy to follow.

Control-depth is very good for a mon-

ADI provides an outstanding warranty on the 6P—the 42-month term is the longest in this group—covering parts, labor, and CRT. Additionally, ADI claims one of the fastest service turnaround records in the industry, but doesn't offer onsite or next-day replacement. The monitor meets all current environmental and ergonomic standards and is VESA DDC 1 and 2B compliant.

The 6P doesn't break a lot of new technological ground, other than the inclusion of a USB hub, but then again, a professional monitor for less than \$800 should not be expected to. The 6P is an excellent choice for corporate settings where the long warranty, low-price, and versatile performance would be valued.

Pros: Very good performance and great price.

Cons: None significant.

EIZO FLEXSCAN FX'D7

Eizo, by Nanao, has earned a well-deserved reputation for producing some of the best shadow-mask technology-based monitors for the professional market. The 17.8-inch (viewable)

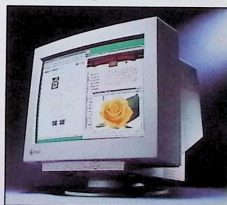


FX'D7 should help maintain that reputation.

As with the other monitors in this group, the FX'D7 is capable of running at resolutions as high as 1600 x 1200, but is really designed for 1280 x 1024 screen resolutions.

At the higher settings, the monitor is limited to a 75Hz refresh rate. At 75Hz, little flicker is evident, but for professionals working closely with their monitor, the image can never be too stable.

And of course, the screen size is suited more for the lower



itor in this price range. In addition to the standard size, position, and brightness/contrast controls, the monitor has color correction, full-screen geometry controls, overscan settings, pinbalance, and raster moiré reduction.

The 6P has a built-in microphone and optional detachable speakers.

The unit also includes a USB hub with four downstream ports and one upstream port. Connection to the computer is accomplished through a built-in cable terminating in a 15-pin D-sub.

BUYER'S GUIDE

Company	Acer	ADI	Eizo	NSA/Hitachi	Optique	Sony
Model	AcerView 99c	MicroScan 6P	FlexScan FX*D7	Supreme 752	V95	GDM-400PS
Price	\$649	\$769	\$995	\$999	\$779	\$1,199.99
CRT type	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Shadow mask	Aperture-grille
Viewable	18	18	17.8	18	18	18
Dot pitch	0.26mm	0.26mm	0.26mm	0.22mm	0.26mm	0.25-0.27mm*
Max resolution	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1280	1600 x 1200
Bandwidth	160MHz	202MHz	Not disclosed	211MHz	200MHz	Not disclosed
Max refresh at:	—	—	—	—	—	—
1600 x 1200	75Hz	75Hz	76Hz	80Hz	76Hz	75Hz
1280 x 1024	88Hz	85Hz	89Hz	92Hz	88Hz	85Hz
Connectors	D-sub/BNC	D-sub	D-sub/BNC	D-sub	D-sub	D-sub/BNC
Extras	USB/speakers optional	USB, micro, speakers optional	Speakers optional	—	—	Color calibration optional
Controls	Digital	Analog	Digital	Digital	Digital	Digital
Onscreen menu	Yes	Yes	Yes	No	Yes	Yes
Geometry	Yes	Yes	Yes	Yes	Yes	Yes
Color	Yes	Yes	Yes	Yes	Yes	Yes
Moiré	Yes h/v	Yes	Yes h/v	Yes h/v	No	Yes
Auto settings	No	No	Yes	No	No	Yes
Usability	Good	Very good	Good	Very good	Very good	Very good
Size	466x472x493mm	483x475x466mm	452x454x477mm	447x454x459mm	450x460x450mm	444x467x454
Weight	27kg	19kg	24kg	24kg	22kg	25kg
Warranty	Three year	42 month	Three year	Three year	Three year parts/one labor	Three year
Display quality	Good	Very good	Excellent	Excellent	Very good	Excellent
Ratings	Recommended —7	Highly recommended —8.5	Recommended —7	Highly recommended —8.5	Highly recommended —8.0	Highly recommended —8.0

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resolution, both in accuracy and apparent image size.

The FX*D7 has an attractive, highly stylized chassis that makes it appear larger than it actually is. The tube is relatively short and the unit takes up little more space than a 17-inch model.

The focus on style has led to a couple of questionable design choices. The first is the decision to place the USB ports at the rear of the unit, near the D-sub connectors instead of in the front of the monitor, where they would be more accessible.

One of the great advantages of USB is its hot-swappable capability, which is diminished if you can't access the ports easily.

The second problem is the controls. Rather than a series of buttons to control the onscreen menu, Eizo has opted for a single, difficult-to-operate, five-way toggle switch.

It may be attractive, but certainly makes scrolling through the otherwise well-conceived menu system more difficult than it should be.

One nice touch is the automatic adjustment button. This feature could help you avoid using the awkward toggle controls. The results of the auto-adjust feature were very good and should suffice for most users.

Fortunately, once you've mastered the controls, the picture is superb.

The FX*D7 breezed through the Sonora Technologies' DisplayMate obstacle course without a hitch. Even at the highest resolutions, focus, color registration, and raster accuracy were outstanding. If you need to adjust the monitor, the controls, although finicky, are deep and complete.

The Eizo name and the advanced features of the FX*D7 don't come without a cost.

At nearly \$1,000, this monitor is priced at the high end of the category and should appeal to those

who insist on quality regardless of price, but of course, those buyers are likely to opt for a display in the 21-inch group.

Pros: Attractive case, outstanding performance.

Cons: Poor layout of USB hub, finicky controls, high price.



Above: The NSA/Hitachi Supreme 752 offers a 0.22mm horizontal dot pitch.

At right: The Optquest V95 offers a 1600 x 1280 maximum resolution at 76Hz.

NSA/HITACHI SUPREME 752



Being first isn't always the same as being best, but in the case of Hitachi's line of 19-inch (18-inch viewable) monitors, they are one and the same.

The second-generation monitor, the Supreme 752, raises the bar set by the original Elite 751.

In actuality, the 752 differs very little from its less-expensive sibling. The primary difference is that the 752 has a 211MHz clock frequency rather than the 200 MHz clock of the 751.

That higher frequency pays dividends in image stability, especially at higher resolutions. The 752 features an extremely stable 80Hz refresh rate at 1600 x 1200 resolutions and a rock steady 92Hz at the recommended setting of 1280 x 1024.

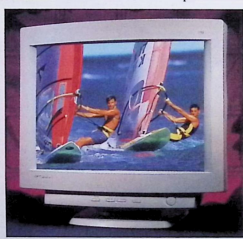
In addition to having the most stable image of all the monitors tested, the 752 boasts top-level

image performance, thanks in part to its very tight 0.22mm horizontal dot-pitch and raster-friendly shadow-mask picture tube. Only the Eizo monitor bested it in overall focus, convergence, and raster purity, and then just barely.

The 752 is packed with solid design features, but lacks some of the flash of other monitors in this group.

There are no multimedia features such as built-in microphones or optional speakers.

Also missing is USB support, and a highly stylized case. The 752 is a relatively attractive monitor in a utilitarian sense.



NSA/Hitachi's design efforts seem to have been centered on minimizing the depth required by the monitor and in making the controls accessible.

Twelve control buttons line the bottom panel on the front of the system. Although the controls were not designed to be accessed purely through an onscreen menu, adjustments are made onscreen.

The depth of the controls is very good with all the standard geometry and color controls in addition to separate horizontal and vertical moiré control.

Hitachi offers a standard three-year warranty on all parts and labor. The unit also meets all government specs for power efficiency and emission standards.

With a suggested list price of \$999, the 752 isn't cheap, but for the performance it delivers, it is quite a bargain, especially if you will be working extensively at higher resolutions.

If your work rarely requires 1600 x 1200, you might consider the 751, which is virtually identical except for a slightly lower bandwidth.

Pros: Exceptional image performance, good control.

Cons: Slightly expensive, no USB.

OPTQUEST

Optquest is the value-priced brandmate of



View-Sonic.

As such, it doesn't come as a surprise that the Optquest V95 is aggressively priced and relatively light on needless frills and fancy features.

Another shadow-mask tube with a 0.26mm dot pitch, the V95 stands out because of its sensible approach to

providing value rather than simply a low price.

The monitor is near the top in bandwidth with a 200MHz clock. It also features the highest resolution in the group at 1600 x 1280 at a better-than-average 76Hz.

At the more sensible resolution of 1280 x 1024, the monitor refreshes at an impressive 88Hz.

Its performance across the board in our DisplayMate tests was outstanding, but it should be pointed out that none of the displays in this group did poorly on the tests, which is an encouraging sign.

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Nonetheless, the V95 produces images that compete well—even with the much more expensive monitors.

As expected, the Invar shadow-mask tube produces excellent raster lines and the display is smooth from corner to corner.

The styling of the V95 is rather plain. The simplicity of the design is matched by the simple, yet fully functional controls. A well-labeled menu button calls up an onscreen menu that is navigated through with two buttons.

A fourth button saves any adjustments and hitting the menu button again closes the menu. Despite the simplicity, the control depth is very good, especially for an inexpensive monitor. Full geometry and color controls are included, however, moiré reduction is not.

Although the spec sheet claims it has moiré controls, I couldn't locate them. However, a nifty zoom and pan control nearly offsets this lack.

Optique's warranty is slightly behind the times. As most other manufacturers move toward three years on all parts and labor, Optique offers the three years only on parts, labor is for one year only.

However, Optique offers an optional 48-hour express exchange service. It is debatable if an inexpensive monitor such as the V95 needs such protection, but for some users it may be an important consideration.

The V95 is an excellent value and should be seriously considered by anyone looking for strictly the best picture-to-dollar ratio. Finkly artists who need the most exacting controls and those who want all the extras such as USB, multimedia speakers, and a fancy case should expect to pay more.

Otherwise, they can expect to settle for less picture quality.

The closest competitor is the MicroScan 6P from ADI, but it

barely nudges out the V95 in the low-cost arena.

This is primarily because of ADI's 42-month warranty, but the call is very close.

Pros: Great price, high bandwidth.

Cons: Lacks moiré control.



SONY MULTISCAN 400PS

Aperture-grille technology is the primary alternative to the more traditional shadow-mask tubes. Many creative users swear by the technology for its exceptional brightness and contrast, but until Sony released its Trinitron 400PS, (18-inch viewable) there was no 19-inch option available.

Sony has always been able to command a premium price for its technology, and the 400PS is no exception—the 400PS is the most expensive monitor in the group.

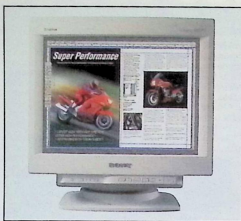
However, it also provides the brightest, most vivid images, which for many users is justification enough for the \$1,199.99 price tag.

Much like the Hitachi 752, Sony's offering isn't full of glitzy features and stylish touches, just solid technology.

Sony monitors rarely win the battle of the spec sheet, but always perform above what might be expected.

The 400PS has a modest 0.25-0.27mm stripe-pitch variable aperture-grille screen (stripe-pitch is similar to dot pitch on an Invar shadow mask tube, but the figures are not directly comparable).

Although the matrix is finer on many of the shadow mask monitors, the 400PS competes very well.



Focus and color convergence on the 400PS excels. Raster performance, the traditional draw-back to aperture-grille technology, is good, although at 1600 x 1200, text and fine line drawings suffer.

The trade-off is exceptional contrast and brightness, which helps the monitor in regulation and is an important feature for animation and video applications where image brightness can vary greatly.

Adjusting the image on the 400PS is accomplished through a well-designed onscreen menu and five easily identifiable buttons on the front panel. The controls are relatively complete with the standard geometry and color adjustments.

The Active Signal Correction button on the front panel enables you to optimize settings with a single push of a button.

As with the similar feature on the Eizo monitor, the adjustments

At left: The Sony Multiscan 400PS uses aperture-grille technology.

made using this feature are very good.

Like many of the traditional tube monitors in this group, the 400PS is best suited for 1280 x 1024 where it achieves a stable 85Hz refresh rate. At 1600 x 1200, the rate drops to 75Hz.

If you need higher refresh rates at the highest resolution and are set on aperture-grille technology, you'll need to move up to the 21-inch category, or wait for awhile. There are no current competitors, although it probably won't be long before they arrive.

The Sony name and its exclusive claim (as of press time) to the 19-inch aperture-grille market make this a sure bet to do well in the market.

Full-color image editors, video producers, and animators should especially favor this monitor. For their needs, text editors, 3D wire-frame modelers, and CAD users will probably want to look more closely at less-expensive, shadow-mask offerings.

Pros: Best color brightness/contrast on the market.

Cons: Mediocre refresh rate, expensive. **PCOV**

Senior contributing editor J. V. Bolkan runs Bolkan-Nelson Media Services with his wife, Shari Nelson, from their base in Springfield, OR. He can be reached online at jvbolkan@aol.com.

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Microsoft's Newest Addition WINDOWS 98

by J.V. Bolkan

Windows 98 is loaded with new features, serious enhancements to current features, and doesn't require a new computer or even a hardware upgrade for most users. Despite all the good news, Microsoft's flagship OS is unlikely to generate more than a fraction of the consumer interest that accompanied the release of Windows 95.

When Microsoft released Windows 3.0, it brought the graphical user interface (GUI) to the mainstream business world.

A few years later when it released Windows 95, the operating system was ready to seriously challenge Apple's system software for use by creative content developers and home users. Now, with nearly 90 percent of the market already locked into some version of Windows, there simply isn't much new territory for Win98 to conquer.

Furthermore, Microsoft has dissipated much of the excitement of the new version.

Many of Win98's new features are available as free upgrades to Windows 95, including two of which are the most dramatic—

Internet Explorer 4.0 and the 32-bit FAT (file allocation table) for large hard disk support.

In essence, an OEM version of Win95 with all the service packs and enhancements offered by Microsoft is very similar in appearance and functionality to Win98.

Ironically, just as Microsoft comes under increased criticism for the dominance of Windows 95, Win98 faces intense competition from its sibling, Windows NT. Windows NT Workstation 4.0 is a power user and networking OS, but the long-anticipated version 5.0 is expected to attract more mid-level users when it ships late this year or early in 1999. Because of this, many people are questioning the need to

upgrade. But despite the absence of hype, there are plenty of good reasons to make the move to Win98.

The concept of enhancing Win95 to match Win98 is an illusion.

First, as anyone with any computer customer support experience will tell you, working with an OS loaded with various patches is a support nightmare.

Second, there are many subtle, yet significant, enhancements in Win98 that might not get headlines, but are well worth the upgrade.

Finally, Win98 introduces support for many recent hardware advances including MMX, USB, DVD, FireWire (IEEE 1394), and a new generation of PC Card peripherals, among others.



Requirements and Installation

The biggest news that no one seems to be talking about is the fact that for the first time in the evolution of the Windows OS, a major upgrade doesn't require an accompanying major hardware upgrade. Naturally, Win98 runs best on the newest, fastest, and most well-equipped hardware available, but it also will run on virtually any system that can run Windows 95, including 486-level systems with as little as 12MB RAM.

Installing Win98 is a breeze, especially when compared to its predecessors, in particular Windows 3.1. The setup program provides more information as it progresses, including a timer that gives a good estimate of how much time remains. It is also considerably quicker than the setup for Windows 95.

The Release Candidate CD we used is capable of installing as either an upgrade to earlier versions of Windows or from a freshly formatted hard disk, but Microsoft is expected to offer separate versions in the retail market.

For those timid (and wise) when it comes to changing their operat-

ing system, Microsoft has included a feature to save your existing Windows configuration and revert to it if necessary. We tested this feature with Windows 95 and found no problems.

Although not technically an installation feature, Windows 98's create startup disk feature is much improved over the lame Windows 95 version.

The resulting Win98 boot diskette supports most IDE and SCSI CD-ROM devices, so if you ever need to re-install your system from scratch, the startup disk and Windows 98 CD are all you'll need to get started.

Interface and Included Applications

Much has been made of the new browser-style interface of Win98. At press time, legal issues were still being decided that may result in drastic changes to the default settings. Essentially, Windows 98 incorporates Internet Explorer 4.0 and uses its interface style for accessing both online and local data and resources.

For instance, you can scroll through your system's local and network hard drives using browser-style forward and back buttons. The browser metaphor isn't ideal for everyone and Microsoft has included the ability to use the more familiar Windows 95-style interface.

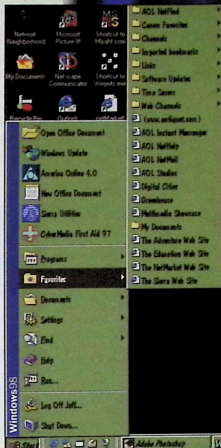
Internet Explorer may have garnered most of the notoriety, but Win98 also includes a number of other Internet-related and networking enhancements, including Microsoft's NetMeeting 2.0 conferencing software, Outlook Express email and newsgroup client, a Web page editor and server, and a streaming media server. Also included is Windows Update, a utility for automatically securing updates, drivers, and patches over the Internet.

Lower-level communication enhancements include Multi-link channel aggregation that enables you to combine multiple connections into a single high-speed connection. With two 33.6k modems and separate phone lines, for instance, you could get a better than 67k channel. ISDN lines also are supported and can be joined to standard modems. You will need a connection at the other end that supports this arrangement, but with Win98, the foundation for high-speed connections is in place. In addition to multi-channel capabilities, Win98 includes support for Point-to-Point tunneling protocol, enabling secure connections for remote users to corporate networks. As with all versions of Windows beyond version 3.11, a simple, but effective, peer-to-peer networking capability is included.

Minor efficiency and usability upgrades have been made to the Dial-up networking and Internet connection wizards. We tested both a Windows 98 new addition to an existing Windows 95 network, and setting up a Windows 98 network from scratch—both were trouble-free and practically automatic.

Maintaining and supporting Windows 98 installations should be much easier. Nearly the entire suite of Windows 95 diagnostic and maintenance utilities have been transformed, updated, or replaced.

In addition, much-needed tools have been added. The automatic



The Windows 98 Start menu is virtually identical to the Start menu in Windows 95.

SUMMARY

Windows 98

Microsoft
1 Microsoft Way
Redmond, WA
(425) 882-8080
\$149, \$99 upgrade
www.microsoft.com
Circle 6 FASTRAK #172

Windows 98 is faster and more stable than the previous version, and supports new hardware. Its only competition is in the future of NT and the past with Win95. Windows 98 is more compatible than NT and a significant upgrade to Win95.

Rating: 8/10





Windows update utility could be a headache for administrators trying to keep uniform configurations. But the rest of the tools, such as the system file checker, registry checker, automatic driver disable, a graphical replacement for sysedit, a configuration utility, and a centralized system information reporting utility will be greatly appreciated.

System utilities are notoriously difficult to evaluate quickly, but at first glance, only the update utility seems suspect—mainly because of its potential for creating mismatched configurations across networks.

The overall stability of the OS seems very good. Over the course of two months of testing with various builds, system crashes and other problems were minor and less frequent than with Windows 95—an incredible performance or beta software.

Performance and Compatibility

New software, older software, even finicky shareware and game software not only ran without conflict on our test system, but also seemed to run slightly faster. Much of Windows 98's stability comes from the fact that in many ways, it is an evolutionary upgrade, rather than the paradigm shift of Windows 95.

One key proof of this is the compatibility of existing Windows 95 hardware drivers and software support.

Windows 98 launches a new driver model that should eventually lead to a single driver that will work in standard Windows as well as future versions of Windows NT. Unfortunately, we were unable to test any such drivers prior to press time.

Native support for new hardware technologies such as MMX, USB, AGP, DVD, and IEEE 1394

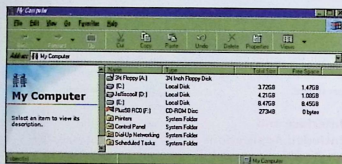
should enable users with updated hardware to use that equipment more efficiently.

Additionally, now that the hooks exist, third-party software and hardware manufacturers will surely focus more energy toward maximizing the potential of these technologies.

Windows 98 maintains its DOS legacy. Perhaps in a reflection of the incremental nature of the

Although we were unable to unearth a program that runs under Windows 95 that wouldn't operate in Windows 98, that shouldn't be taken as guarantee that compatibility won't become an issue.

Potentially, developers may write programs that are Windows 98 specific, although this is unlikely in the near term. More likely is that new hardware devices



With the integration of Microsoft's Internet Explorer 4.0, the local file structure can be browsed just like that of a Web site. Type in a folder name in the Address bar and it will take you to it.

upgrade, the DOS version displayed in the release candidate beta is 4.10 rather than the 5.0 that would signify a major upgrade from Windows 95's 4.0. Some critics delight in pointing out that Windows still is based on DOS. But that foundation is critical to maintaining compatibility with legacy software—a huge consideration for businesses that rely on custom software that has not yet been updated for 32-bit graphical operating systems.

Microsoft isn't particularly known for maintaining strong bridges to the past, as evidenced by its initial compatibility problems between Microsoft Office 97 and Office 95. However, it seems to have taken the criticism it received in that instance and learned from it. The company's decision to support the Intel 486 processor family, at least through one more revision, shows that it understands that at least 30 percent of existing computers still are based on that venerable Intel CPU.

will arrive with drivers built on the new unified driver specification. Early on, you can expect developers to write drivers for both Windows 95 and 98 operating systems, but inevitably, the new specification will come to dominate, especially if Windows NT continues to become more popular.

Competition and Acceptance

Windows 95 brought Microsoft to the brink of monopoly in the desktop OS market.

Ironically, as it prepares to launch the successor, another Microsoft product appears to be a powerful rival: Windows NT. Although highly regarded by many and increasingly popular in the lucrative workstation and networking markets, NT has not yet gained serious market penetration on the desktop.

Acceptance of NT was once primarily hindered by its relatively high hardware requirements

and its mediocre, and in some cases, lack of, support for legacy 16-bit software. As the entry-level business system surpassed NT's requirements, and the importance of older software diminished, the biggest hurdle has become the dismal lack of device driver support.

Windows NT Workstation 5.0, once scheduled for release in early 1998 and now expected to ship no sooner than 1999, has raised the hopes of many that finally they can migrate to the more "professional" version of Windows.

As only unreleased software can do, NT 5.0 has become a beacon of unrealistic hope. Although the new version will surely make strides toward bridging the gulf, the reality is that it will lack, at least initially, many of the features required for mass acceptance—specifically a full, or nearly so, range of device support and software compatibility.

In addition to in-house competition, Windows 98 will continue to compete with Apple's system software. Potential competition remains from the Internet arena—Java and other "light" operating systems built around the concept of the Network Computer.

Despite formidable and potential competitors, Windows 98 is as sure a bet as you're likely to find in this industry.

Microsoft may not have desktop operating systems locked up for eternity, but it looks as if Windows will continue its dominance for at least the rest of this century. **PGV**

Senior contributing editor J. V. Bolkan runs Bolkan-Nelson Media Services with his wife, Sharleen Nelson, from their base in Springfield, OR. He can be reached online at jvbolkan@aol.com.

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by J.V. Bolkan

MS PLUS FOR WINDOWS 98

Host of Utilities for Tuning Your System

Amid the furor over Microsoft's practice of adding more utilities to its core operating systems, few people seem to note that the company sells a collection of Windows utilities in its Plus series.

The original Plus for 95 included many utilities and mini-applications that have been built into the core of Windows 98, including the controversial Internet Explorer and a disk compression program. Therefore, the new version is less an upgrade than an entirely new collection.

One of the most visible and popular utilities in Plus 95 was the desktop theme application.

The core operating system now has themes included as well as the dynamic window sizing also found in Plus 95.

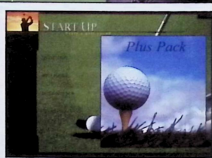
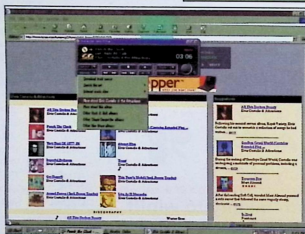
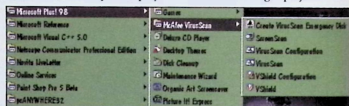
The new version is still heavy in interface window dressing (pardon the pun) with a much larger collection of high-quality

as a stand-alone utility in addition to being launched from the maintenance wizard scheduler.

The other two main utilities are from Microsoft. The first is a greatly-improved CD player and a disk cataloger.

In addition to being more attractive than the spartan player

Anyone familiar with the original Plus knows that the icing on the cake is the new game collection—Plus for 98 doesn't disappoint. Three games are included. The first is a single-player version



At Top: Plus includes McAfee VirusScan and a more robust maintenance wizard. **At left:** CD-Player Deluxe enables you to download music information from the Internet. **Above:** Games are also features in Plus 98.

themes, but the emphasis has moved to providing more useful tools.

The original collection had system agent, a nifty utility for scheduling some basic disk maintenance options such as defrag and scandisk.

The new version includes a much more robust maintenance wizard that is capable of performing a wider range of tasks, such as running a virus scan, clearing unusable icons from the taskbar and start menu, deleting unused files, and moving commonly used data to faster, contiguous hard disk locations. The scheduling portion of the program also proves quite versatile and more customizable than its predecessor.

The virus checker is McAfee's popular VirusScan. It can be run

included with basic Windows, CD-Player Deluxe even includes Internet capabilities. Click on the Internet button and the program downloads disc title, artist, and track information and adds it to the database. Additionally, the program can capture further information about the album and artist, link you to general music sites, and even suggest appropriate sites based upon the type of music you listen to.

The second Microsoft utility is a limited edition of the company's Picture It! photo editing and project-creation software. Although it's not nearly as sophisticated as Photoshop or even Adobe's Photo-Deluxe (which competes with the full version of Picture It!), this mini-app provides basic imaging tools and printing capabilities in a streamlined package.

of SegaSoft's Lose Your Marbles, a beautiful and addictive 3D arcade-style game. Microsoft's 3D Golf is also included in a fully enjoyable but limited version.

Of course, there is a new version of solitaire. Spider Solitaire is an extremely challenging version that features save game and undo capabilities.

Plus for 98 isn't essential, but it sure is handy. You'll pay more for the important utilities separately, and you won't get to have the cool themes and fun games.

The program is expected to be released concurrently with Windows 98. **PCGV**

Senior contributing editor J.V. Bolkan runs Bolkan-Nelson Media Services with his wife, Sharleen Nelson, from their base in Springfield, OR. He can be reached online at jvbolkan@aol.com.

SUMMARY

MS Plus for Windows 98

Microsoft
One Microsoft Way
Redmond, WA
(425) 882-8080 • \$44.95
www.microsoft.com
Circle 6 FASTRAK #171

Plus for Windows 98 offers a decent utility collection with bonus frills. Games are pretty cool. Not particularly deep feature set.

Rating: 8/10





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by Ron Eggers

OLYMPUS D-340L, P-300 PRINTER

Combine for Instant Digital Imaging

Digital camera manufacturers are beginning to realize that photographers want digital cameras to look and feel like conventional cameras. One camera that could easily be mistaken for a 35mm is the Olympus D-340L. It's compact, lightweight, and very handy. The D-340L is the third generation in the company's 300 series of very successful compact digital cameras. While it is small, it's a serious piece of equipment with very good image resolution and excellent optics.

With a maximum resolution of 1280 x 960 pixels, the D-340L is a good choice for a variety of applications. Captured digital images can easily be blown up to 8 x 10 inches, and even larger, without pixelization. Regardless of how high the capture resolution is, however, if the optics of a camera aren't up to par, images are still marginal. One of the things that sets the D-340L apart is the quality of the optics.

The company has incorporated the same high-quality optics into

the D-340L that it designs into its 35 mm compact cameras.

Not only is the lens sharp, it is also fast. Its f2.8 maximum exposure capability makes it a good choice for shooting in relatively low light levels to produce quite usable images.

The digital tele/wide mode is a nice feature for a camera as compact as this one, but it is important to remember that it is digital, not optical, magnification.

Shots taken with digital telephoto lenses are generally not quite as sharp as those taken with optical telephoto lenses. The unit also has macro-focusing capabilities, for focusing as close as four inches.

The D-340L uses SmartMedia cards for image storage, with images being saved as standard JPEG files. It ships with one 4MB card. It also has onboard DRAM, which makes it possible to employ a sequence mode to

capture action. The camera can take up to 10 frames in half-second intervals.

Image files can be output to any video source, such as a TV or VCR, transferred to a computer, or read directly by a computer from an optional PCMCIA or floppy disk adapter.

Images can also be output directly to the Olympus Personal Photo Printer P-300, without



Top: The Olympus D-340L is designed like a traditional 35mm.

Left: The P-300 printer uses dye-sublimation output.



going through a computer.

The P-300 is a dye-sublimation printer not much larger than an answering machine. It can generate 4 x 5.5-inch Truecolor digital photos at 300dpi at a rate of one shot every 95 seconds.

Olympus product literature compares 300dpi dye-sub output to 2400dpi inkjet output. That may be a little too optimistic, but dye-sub images are certainly a lot higher quality than inkjet images. The prints that the P-300 generates are sharp and vibrant. They compare favorably to commercially printed photos.

The P-300 can print on a number of different media, including photo paper, label photo paper, and miniature photo label paper.

It can also be used to generate index prints, which have become popular with the introduction of

the APS film format. Up to 30 reprints can be generated automatically, without reloading or user interaction.

The unit works with all kinds of digital data, not just images from the Olympus camera.

For printing from a computer, it can be attached to either a

Macintosh, through a serial cable, or to a Windows system via a parallel port connection.

A parallel port cable and appropriate software drivers ship with the printer.

The printer is easy to set up, and use. The dye-sub ribbon is loaded into a side door while a paper tray slides into the front.

The rest of the operation is pretty much automatic. A button on the front of the unit indicates that data is coming in directly from the camera, instead of from a computer.

The D-340L lists for \$699, while the P-300 printer costs \$399.

Print media prices for the printer vary depending upon the type of media and the number of sheets in the pack, but photo prints run roughly 65 cents apiece, photo labels cost about \$1 each, and miniature photo labels cost \$1.25 for each page of 16.

Together, the D-340L and the P-300 provide affordable instant imaging capabilities at a quality level and a price point that's hard to beat. **PCGV**

Ron Eggers is a senior editor with NewsWatch Feature Service. He can be reached online at 71210.3556@compuserve.com.

SUMMARY

Olympus D-340L, P-300

Olympus America
Two Corporate
Center Dr.
Melville, NY 11747
(800) 347-4027 • \$699 for D-340L,
\$399 for P-300
www.olympus.com
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The Olympus D-340L and P-300 are versatile pieces of equipment well suited for a range of digital imaging applications. Together, they can generate prints faster than going to a one hour photo lab.

Rating: 8/10



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| 27 ● 23 | 36 ● 23 Fax/Modem | 45 ● 32 | 55 ● 32 Film Recorders |
| 28 ● 24 | 37 ● 24 CD-ROM Drive | 46 ● 33 | 56 ● 33 Windows NT |
| 29 ● 25 | 38 ● 25 Scanners | 47 ● 34 | 57 ● 34 Windows '95 |
| 30 ● 26 | 39 ● 26 Sound Cards | 48 ● 35 | 58 ● 35 Color Printers/Copiers |
| 31 ● 27 | 40 ● 27 15-Bit/16-Bit Color Graphics Boards | 49 ● 36 | 59 ● 36 TV Boards |
| 32 ● 28 | 41 ● 28 24-Bit Color Graphics Boards | 50 ● 37 | 60 ● 37 Digital Camera |
| 33 ● 29 | 42 ● 29 32-Bit Color Graphics Boards | 51 ● 38 | 61 ● 38 Video Equipment/Camcorder |
| | | 52 ● 39 | 62 ● 39 Other (please specify) _____ |

6. Which of the following types of software are you involved in purchasing? (Fill in ALL that apply)

- | Currently Use | Plan to Purchase | Currently Use | Plan to Purchase |
|---------------|-------------------------------|---------------|--|
| 63 ● 0001 | 67 ● 0001 Paint/Image Editing | 71 ● 0005 | 75 ● 0005 Animation |
| 64 ● 0002 | 68 ● 0002 Presentation | 72 ● 0006 | 76 ● 0006 Multimedia Authoring |
| 65 ● 0003 | 69 ● 0003 Publishing | 73 ● 0007 | 77 ● 0007 Video Editing |
| 66 ● 0004 | 70 ● 0004 Sound/Music | 74 ● 0008 | 78 ● 0008 Other (please specify) _____ |

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1. What is your organization's primary business/industry? (Fill in ONE only)

- | | |
|---|--|
| 01 ● 15 Communications/Publishing/Ad Agency | 08 ● 85 Government |
| 02 ● 25 Entertainment/Broadcasting | 09 ● 95 Health/Medical/Legal |
| 03 ● 35 VAR/Dealer/Systems House | 10 ● 105 Education |
| 04 ● 45 Engineering/Architecture/R&D | 11 ● 110 Transportation/Utility |
| 05 ● 55 Computer Manufacturing | 12 ● 120 Agriculture/Mining/Construction |
| 06 ● 65 Computer Services | 13 ● 130 Other (please specify) _____ |
| 07 ● 75 Finance/Banking/Insurance/Real Estate | |

2. What is your primary job function? (Fill in ONE only)

- | | |
|--|---|
| 800 ● 15 Information Systems (IS) Management | 830 ● 230 Education/Training Management |
| 801 ● 25 Corporate Management/Sales | 835 ● 95 Other (please specify) _____ |
| 810 ● 200 Video/Animation/Multimedia/Producer | |
| 820 ● 210 Graphic Artist/Art Director/Web Designer | |
| 825 ● 220 Technical Designer/Architect/Engineer | |

3. Are you involved in your organization's purchasing process for computer graphics-related hardware and/or software? 23 ● Y Yes 24 ● N No

4. What are your primary applications for computer graphics? (Fill in ALL that apply)

- | | |
|----------------------------------|-------------------------------------|
| 0001 ● Multimedia Communications | 0004 ● Color Electronic Publishing |
| 0002 ● Business Presentations | 0005 ● Video Production |
| 0003 ● Creative Arts | 0006 ● Other (please specify) _____ |

5. Which of the following computer graphics/video products are you involved in purchasing? (Fill in ALL that apply)

- | Currently Use | Plan to Purchase | Currently Use | Plan to Purchase |
|---------------|---|---------------|--------------------------------------|
| 25 ● 21 | 34 ● 21 Color Monitors | 43 ● 30 | 53 ● 30 Video Capture Cards |
| 26 ● 22 | 35 ● 22 Graphic Tablets | 44 ● 31 | 54 ● 31 Mass Storage |
| 27 ● 23 | 36 ● 23 Fax/Modem | 45 ● 32 | 55 ● 32 Film Recorders |
| 28 ● 24 | 37 ● 24 CD-ROM Drive | 46 ● 33 | 56 ● 33 Windows NT |
| 29 ● 25 | 38 ● 25 Scanners | 47 ● 34 | 57 ● 34 Windows '95 |
| 30 ● 26 | 39 ● 26 Sound Cards | 48 ● 35 | 58 ● 35 Color Printers/Copiers |
| 31 ● 27 | 40 ● 27 15-Bit/16-Bit Color Graphics Boards | 49 ● 36 | 59 ● 36 TV Boards |
| 32 ● 28 | 41 ● 28 24-Bit Color Graphics Boards | 50 ● 37 | 60 ● 37 Digital Camera |
| 33 ● 29 | 42 ● 29 32-Bit Color Graphics Boards | 51 ● 38 | 61 ● 38 Video Equipment/Camcorder |
| | | 52 ● 39 | 62 ● 39 Other (please specify) _____ |

6. Which of the following types of software are you involved in purchasing? (Fill in ALL that apply)

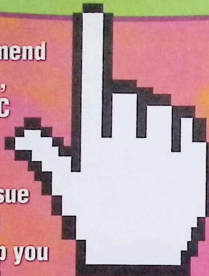
- | Currently Use | Plan to Purchase | Currently Use | Plan to Purchase |
|---------------|-------------------------------|---------------|--|
| 63 ● 0001 | 67 ● 0001 Paint/Image Editing | 71 ● 0005 | 75 ● 0005 Animation |
| 64 ● 0002 | 68 ● 0002 Presentation | 72 ● 0006 | 76 ● 0006 Multimedia Authoring |
| 65 ● 0003 | 69 ● 0003 Publishing | 73 ● 0007 | 77 ● 0007 Video Editing |
| 66 ● 0004 | 70 ● 0004 Sound/Music | 74 ● 0008 | 78 ● 0008 Other (please specify) _____ |

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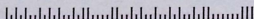
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by Jacqui Summers

FUSION 3.0

Web Page Creation Tool Adds DHTML

In the relatively young field of Web design tools, reaching version 3.0 is a good indication of a successful product growing from its innovative roots into maturity. NetObjects Fusion is a good example of such a product. The 3.0 release is the most solid yet, and includes a host of new features that should help boost its popularity outside its core market of HTML-challenged graphics designers, and into the broader arena of Web developers using more traditional coding tools.

Fusion's strength has always been in hiding HTML from the designer, while allowing tremendously powerful layout, site building, and site management tools. In the process however, previous versions sacrificed access to, and editing of, the HTML code generated by the program.

Integrating external applications and HTML from other sources were not simple tasks. Fusion 3.0's more than 150 new and improved features go a long way to rectifying this and to proving NetObjects has a receptive ear to user input.

HTML Accessibility

The major functional improvement in Fusion 3.0 is its increased support for and integration of external content, scripts, and HTML code. Not only does every object in the layout page have a button in the Properties palette accessing a view of the HTML generated for it, but external HTML files also can be referenced into the site as freely floating objects, layout regions, or entire pages. Fusion manages the assets for this external HTML but does not touch the actual code, a welcome relief

object through an enhanced scripting interface.

Beyond this, creating clean HTML within the program is eased with the addition of a new textual mode, which treats the specified layout area like a standard text editor, allows objects to

Fusion 3.0 also adds support, through the use of third-party components, for integrating Fusion sites with dynamic database publishing servers like Netscape

Livewire, Lotus Domino, Allaire Cold Fusion, and Microsoft Active Server.

At left: The addition of rulers and guides to the Page Layout view in Fusion 3.0 improves accuracy and makes the program even more familiar to print layout designers.



Layout Precision, Active Content, and DHTML

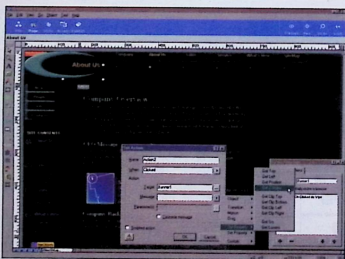
Previously, Fusion relied on the creation of invisible GIF objects and nested tables for pixel-accurate layouts.

In Fusion 3.0, this option is still available, providing compatibility with 2.x/3.x browsers. However, for DHTML-enabled 4.x browsers, you can also achieve the same layout accuracy by using CSS layers and positioning—an on a site, layout, or object basis.

With CSS layers you can stack, move, and hide elements to create an active page. When working on an object-by-object basis, a convenient red flag appears on the border of any layout area overlapping another if they

are not specified for publishing using CSS.

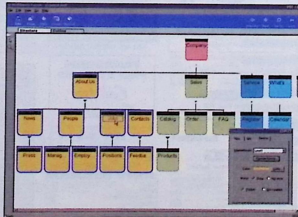
Fusion 3.0 takes a message-based approach to Dynamic HTML

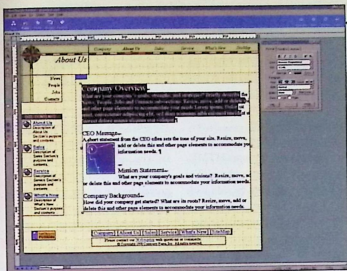


Above: Defining Dynamic Actions for an object involves choosing from a series of messages and target options to form more complex behaviors. At right: In Site Structure View, you can shift-select multiple pages to form sections in order to apply global Master Border, publish, and style options.

for code purists. Editing external HTML is as simple as double-clicking on the object to launch your preferred HTML editor. Allaire HomeSite 3.0 ships with the package. Custom scripts or tags can also be added to any page or

be embedded in text blocks or table cells with full alignment control, and produces smaller, faster code.





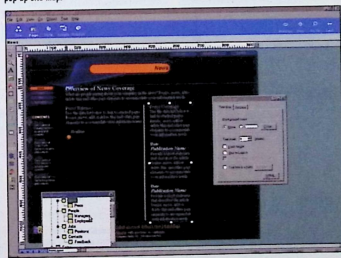
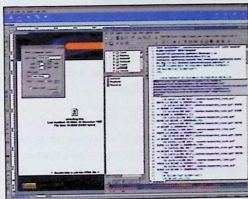
through a process called Dynamic Actions, which can be defined for every element on the page, or for groups of objects held together in Fusion's new Layout Regions. In effect, these Actions provide you with prepackaged JavaScript for creating DHTML-based animations and interactive effects such as rollover buttons and transition effects. Individual Actions can be made to cascade with one another and custom scripts can be added to built-in messages to form more complicated behaviors.

Macromedia's Dreamweaver works with Layers in much the same way, but its use of a timeline is more intuitive. Dreamweaver also has better built-in support for CSS font styles, for which Fusion requires manual coding.

Above: Fusion 3.0's textual mode treats a layout area like a text editor allowing image objects to be embedded in the text with full alignment control, producing smaller, faster HTML. **Below:** Fusion 3.0's site navigation in Page layout view has been improved with a pop-up site map.

definite improvements. First and foremost, the entire interface has been streamlined to provide a cleaner workspace, with dockable, draggable toolbars.

In Page view, rulers and guides join the customizable grid. The grid, at long last, has a keyboard



Below: Double-clicking on the External HTML layout area on a Fusion 3.0 page automatically opens up the preferred HTML editor—in this case Allaire HomeSite 3.0—for clean HTML editing.

page placement and full access to parameters.

The Site, Style, and Asset views are largely unchanged from 2.0, with the exception that you can now shift-select a group of pages to form a section in Site layout

view—easing the global application of status, navigation, style, MasterBorder, and page extension attributes.

Publish or Perish

The Publish view has been totally revamped to reflect the new user control of the published site structure. You have the choice of three built-in formats—flat, by file type, or by section (mirroring the setup of your site in the Fusion Site view)—or you can customize the structure with any combination of directories, including alias folders. Multiple-server locations and parameters are possible for different preview and publication needs. Previewing can now be performed by section as well as by page or site, and the option to only publish changed assets has been fixed.

Upon publishing, you can choose nested or regular tables as well as CSS Layer positioning, depending upon your target browser—thoughtfully explained for you within the Publish Options requester. NetObjects calls this ability "Everywhere HTML" because you can build your site once

The DHTML code that Fusion generates is cross-browser compatible for 4.x versions of Internet Explorer and Navigator. It also degenerates gracefully—leaving objects in their end state if the browser can't animate them with Dynamic HTML.

Interface, Layout Tools

Fusers familiar with Fusion will recognize version 3.0's five views—a Page layout editor, a flow-chart/tree-style Site view, a Style gallery, an Assets database, and the Publish view. Within these views however, there are some

toggle on/off. MasterBorders are easier to control and convert to HTML frames. Frame targeting requires no scripting and it is now possible to have multiple forms on one page.

A completely rebuilt image-handling engine provides improved image import and adds two formats—PNG and progressive JPEG. Image asset editing is simpler through direct links to external editors, followed by automatic update of the image throughout the site. Broader multimedia plug-in support is further improved with inline

SUMMARY

Fusion 3.0

NetObjects

2055 Woodside Rd.
Redwood City, CA,
94061

(650) 482-3200

\$295 Win95/NT, \$99 upgrade, \$195

competitive upgrade

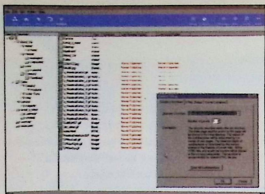
www.netobjects.com

Circle & FASTRAK #174

Ease of use, pixel-precise layout control, point-and-click DHTML implementation, and excellent site management. HTML access still limited, site import accuracy patchy, and file compacting slow.

Rating: 8/10





Above: A redesigned Publish View reflects the new ability to customize the directory structure for a site to be published.

and then publish it anywhere without rebuilding.

Fusion 3.0 stores your site in a single compacted database file, providing tight integration of site elements but increasing both the likelihood of file corruption and the severity of a system crash.

For this reason, Fusion 3.0 automatically creates a backup file every time it closes and it also keeps a user-defined number

of back-up versions in a separate folder. Be forewarned—compacting an NOD file in Fusion 3.0 for a large site can take upwards

of 15 minutes. You can turn this option off and use up more disk space, but the program warns that this is not wise and could cause instability.

What's Still Missing

Fusion 3.0's learning curve is still relatively steep if you want to go beyond the media integration built into the program, but at least you have the hooks available if you want to do your own scripting and coding.

The import and conversion of existing HTML sites into the pro-

gram has been somewhat improved, but is still a hit-or-miss affair, especially when large complex sites with multiple master borders are involved.

And, although NetObjects' strides in making Fusion 3.0 more HTML-friendly are welcome, the ability to have HTML side by side with the layout, as implemented in Dreamweaver, would still be nice.

NetObjects maintains excellent user group forums on its Web site. On one of those forums, I was happy to find that other users had encountered the same bug I had when using Netscape Navigator 4.0.5. When previewing a site locally using this browser, Actions will not work.

However, when viewing the pages from a Web server they will. Netscape has acknowledged this problem is theirs and intends to fix it in a future release.

Conclusion

Fusion 3.0 is still the best overall WYSIWYG Web site creation tool. Its site management, which is already excellent, has been improved by the ability to customize Publish properties.

Layout precision and control have been updated to DHTML compatibility without drastically changing the way the program works, and an open architecture enables the more adventurous designers to customize Fusion's support of rich media and its connectivity with dynamic server content. **PCGV**

Jacqui Summers is senior editor of *PC Graphics & Video* and art director of *Digital Studio*. She is also the Web master for the Advantstar Digital Media Group.

by Jacqui Summers

PRECISION WS410

Dell's Dual 400MHz Is Equipped To Rule

Just over two years ago, after one too many long nights with my 16MB 60MHz Pentium, I decided it was time to upgrade. And this time, in contrast to previous forays into custom system territory, I wanted a top-of-the-line fully configured machine that I wouldn't need to update constantly except with a few external peripherals.

Acting on a friend's advice and hearing of the company's reputation for high-quality components, I checked out the Dell Web site. I was soon ordering a system that more than doubled my computing power and was as close to state-of-the-



THE DELL PRECISION WORKSTATION 410 AS REVIEWED

- Dual 400/100MHz Pentium II processors with 512KB ECC L2 cache
- Intel 440BX PCI core chipset
- 256MB ECC 100MHz SDRAM (2 128MB DIMMs)
- Integrated 16-bit Plug and Play Crystal 3D CS4237B Sound Blaster comp. sound chip
- Integrated 3Com 10/100Mbit Ethernet with Wake Up On LAN support
- Integrated Adaptec AIC-7890 Ultra2/Wide LVD SCSI (80MB/s), Adaptec AIC-7880 Ultra/Wide SCSI (40MB/s), EIDE ATA-33 (Ultra DMA/33) (33MB/s) and floppy controllers
- Diamond FireGL 1000 Permedia 2 AGP graphics card with 8MB 100MHz fixed SGRAM with OpenGL, Heidi, Direct3D, and AutoCAD support
- Slots—1 AGP (66.6MHz), 4 PCI (33.3MHz), 1 PCI/ISA (8.33MHz), 1 RAIDport socket
- Ports—2 serial, 1 parallel, 2 USB, 1 Ultra/Wide SCSI, 1 RJ45 network, 1 kbd, 1 mouse
- Bays—1 floppy, 3 external 5.25-inch, 4 internal hard drive bays
- 1 floppy drive, 1 9GB 10,000rpm Seagate Cheetah HD, 1 12X/24X NEC SCSI CD-ROM
- 300-watt power supply in mini-tower
- Windows NT 4.0 Workstation software installed
- 21-inch Dell Ultrascan 1600HS (aperture grille)

art as I could afford—the Dell Dimension XPS P166c. Several days and \$4,000 later I couldn't believe how fast the 166MHz processor was, how much space the 2GB IDE hard drive gave me or how much more I could do with 32MB RAM than 16MB.

The 17-inch monitor was expansive compared to my previous 15-inch model. It all seems a little laughable now—because it's up-grade time again.

I'm a reasonably patient person. I have spent many hours staring at various progress indicators



on my screen while I apply filters, save large files, or render images. I know that for most of the tasks I perform every day, in a variety of graphics programs, my current system is more than adequate. However, there is a fine line that determines when time is money and where patience ends. After testing out the latest state-of-the-art offering from Dell, I know I've crossed that line for good.

The Dell Precision WS410 workstation I looked at houses dual 400MHz Pentium II chips, 256MB RAM, and a 9GB SCSI Cheetah drive that in combination with Windows NT, packs a very powerful punch (see configuration chart).

The system is available in a variety of pricing and configurations. The one we tested fell squarely in the mid-range. You can equip it with single and dual processors (350MHz and 400 MHz) and a range of graphics cards, including the top-of-the-line Intergraph Intense 3D Pro 3410T and a dual-monitor-capable Applan Jeronimo as well as the Diamond AGP Permedia 2 card, which I tested.

Hard disk storage can be SCSI (4 or 9GB) or EIDE (4GB) with enough internal space to house four hard drives. There is also onboard integrated RAID0 and RAID1 support. Four DIMM sock-

ets mean a maximum capacity of 1GB 100MHz RAM, once the 256MB modules hit the streets this month.

For not much more than I spent two years ago (minus the price 21-inch monitor), I could have a system that more than quadruples my speed—and gives me 7GB more of the fastest storage space available.

As you can see from the time trials below, there is an average five-fold speed increase in a wide variety of graphics applications performing a varied number of tasks. This is what you might expect, considering the jump from 166MHz to 800MHz and the new 100MHz system bus.

However, processor speed is not the only accelerating factor, and only Photoshop and Inspire 3D, amongst the software tested, take advantage of the second processor.

The 256MB of 100MHz RAM and 10,000rpm Ultra/Wide SCSI hard drive have just as much to do with the speed increase, as does the AGP graphics card with a bus speed up to 300 percent faster than its PCI-based cousins.

Some results are skewed because of a dependence on RAM. In Inspire 3D, rendering times for the 640 x 480 image were very slow on the P166, largely because of the lack of RAM and because a slow hard drive was being used to cache ray trace render data.

With a number of companies offering 400MHz workstations, it is important for a company like Dell to distinguish itself from the pack. It does this by maintaining a reputation for service, well-chosen, high-quality components and peripherals, and a competitive mail-order cost.

Technical support from Dell is fast and informed. When my floppy drive failed to work on the WS410, after first checking the user technical support forums online, I emailed tech support

and received a response the next day suggesting I check the internal connectors and instructing me in how to open the case properly. I had already realized this was the most likely problem and fixed the loose floppy cable with some difficulty. The WS410 case is extremely easy to open with one-button release of both side and back covers. Access to all components is eased by a hinged power supply, which swings out of the way. Just my luck—the only component which I had to get at is the floppy and its cable.

Once inside, you can see the beauty of so many motherboard-integrated components—SCSI controllers, network chip, sound chip, and RAIDport socket. The

WS410 leaves four open PCI slots and one shared PCI/ISA slot for add-in cards, especially useful for video applications.

It is hard to think of anything negative to say about a system that speeds your workflow by 500 percent. The cost may be slightly higher, but the excellent quality and support make that worthwhile. For any graphics or power-intensive application, the WS410 is a well-designed solution. **PCGV**

Jacqui Summers is senior editor of *PC Graphics & Video* magazine and art director of *Digital Studio* magazine. She is also the Web master for the Advantstar Digital Media Group.

TIME TRIALS IN THE REAL GRAPHICS WORLD

	DELL WS410	DELL XPSP166*	SPEED
ADOBE PHOTOSHOP 5.0:			
20MB image launch and open:	17.26 sec.	80.43 sec.	4.65X
5MB image launch and open:	9.91 sec.	52.00 sec.	5.25X
20MB image rotate 90 degrees:	7.73 sec.	56.19 sec.	7.27X
5MB image rotate 90 degrees:	2.63 sec.	6.83 sec.	2.60X
20MB image, apply radial blur filter	23 min. 40 sec.	insufficient RAM	—
5MB image, apply radial blur filter	4 min. 28 sec.	16 min. 48 sec.	3.76X
QUARK XRESS 4.0:			
1MB file launch and open:	5.22 sec.	21 sec.	4.02X
5MB file launch and open:	7 sec.	30 sec.	4.29X
Import 8 x 10-inch TIF file (20MB):	1 sec.	9 sec.	9X
Import 4 x 5-inch TIF file (5MB):	.3 sec.	3 sec.	10X
MACROMEDIA FREEHAND 8:			
File launch and open (45K):	7.01 sec.	23 sec.	3.28X
Export full page image to 300dpi TIF:	50 sec.	2 min. 55 sec.	3.5X
Import/place 30MB TIF file:	1.15 sec.	23 sec.	20X
MICROGRAFX SIMPLY 3D:			
CD-ROM install (app, fonts—120MB):	1 min.	4 min. 32 sec.	4.53X
Render to AVI:	1 min. 55 sec.	6 min. 15 sec.	3.26X
Render to GIF animation:	54 sec.	2 min. 44 sec.	3.04X
METACREATIONS BRYCE 3D:			
Render 640 x 480 highest quality:	35 min. 35 sec.	1:47 min. 19 sec.	3.02X
NEWTEK INSPIRE 3D:			
Full install from CD-ROM (260MB)	2 min.	5 min. 41 sec.	2.84X
Render 640 x 480 highest quality:	4 min. 15 sec.	60 min. 43 sec.	14.29X
ULEAD MEDIA STUDIO PRO 5.0:			
Full install from CD-ROM (104MB):	57 sec.	3 min. 4 sec.	3.23X
Make Preview 640 x 480:	7 min. 11 sec.	26 min. 16 sec.	3.66X
Save AVI 320 x 240 (Cinemascope):	4 min. 37 sec.	12 min. 35 sec.	2.73X
Apply filter to 320 x 240 8.5 sec. clip:	3 min. 57 sec.	7 min. 56 sec.	2X

* The base test system is a 166MHz Dell Precision with 32MB EDO RAM, an 8MB STB Velocity 128 graphics card, a 4X EIDE CD-ROM drive and two 4GB EIDE hard drives.

SUMMARY

Precision WS410

Dell Computer Corp.
One Dell Way,
Round Rock, TX 78682
(800) www.dell
\$6,171 as configured, price range: \$2,927
(base 350MHz) up to \$11,719 (fully loaded
dual 400MHz).
www.dell.com
Circle & Web #175

Hard to beat combination of fast powerful components, accessible case design and well-selected peripherals. Starter system is a little pricey and some options limited.

Rating: 9/10



POWER PLATFORMS

System updates

edited by Maya Cointreau

DUAL EXTENDED TAG RAM Supported by Compaq Pro 6000



Compaq has delivered the Professional Workstation 6000, ideal for mission-critical, processor-intensive applications like 3D animation and video editing, the company said.

It uses dual-memory controllers and dual-peer PCI buses. The Professional Workstation 6000 can be configured with dual 300MHz Pentium IIs with Extended Tag RAM. Additional fea-

tures include a 4GB hard drive, six expansion slots, 10 drive bays, a Netelligent 10/100 TX Embedded UTP controller, PremiereSound audio, ECC memory, an integrated Ultra-Wide SCSI controller, and either a 16X or a 24X CD-ROM drive. It is priced starting at \$3,800.

Circle & FASTRAK #101

HP'S BRIO DEBUT HAS ACCELERATED GRAPHICS PORT

Hewlett-Packard's Brio 8532N PC has arrived, sporting Intel's new 440BX chipset.

Running Windows NT 4.0, the Brio features an 8GB hard drive, 64MB SDRAM, an ATI RagePro AGP graphics card with 4MB VRAM, a 32X CD-ROM drive, and 16-bit audio.

Additional support includes pcANYWHERE32 remote support, McAfee VirusScan, PC diagnostics and networking software, and a three year warranty. It is priced at \$2,199.

Circle & FASTRAK #103

Tri-Star's StudioStation Packs Digital Effects

Tri-Star has released the StudioStation DVE Pro, a Windows NT-based digital video editing solution running on single or dual 333MHz Pentium II processors.

It includes the DPS Perception Executive Producer video effects system, featuring the PVR-2500 Perception video recorder, AD-2500 analog live-capture video daughtercard, DAR-2500 A4V digital audio recorder, PVR PFX transition accelerator, and DPS Video Action PVR 5.0 non-linear editing software.

The StudioStation DVE Pro is priced starting at \$3,999.

Circle & FASTRAK #104



Intergraph's Latest TDZ 2000 GL2 Features Two Different Workstation Configurations

Intergraph offers you two workstation configurations for its latest, the TDZ 2000 GL2. The first includes one 400MHz Pentium II processor, 32MB



RAM, 4.3GB EIDE disk, a 4MB Matrox Millennium II AGP graphics card, and Windows 95.

The second also features a 400MHz Pentium II processor and a 4.3GB EIDE disk, while offering 4MB SDRAM, an 8MB AccelSTAR II graphics card, and Windows NT. They are priced at \$3,230 and \$3,495, respectively.

Circle & FASTRAK #102

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logo and enter in the FASTRAK
number for each product you
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page 64.

Dell Ships OptiPlex GX1 With 440BX Chipset

Dell has released the OptiPlex GX1 desktop PC featuring a Pentium II processor with the 440BX chipset. Standard features include integrated 2X



AGP video, 8MB of 100MHz video memory, Wake-On LAN networking, Desktop Management Interface 2.0, ACPI capability, remote system boot and configuration, and a monitor. It is priced starting at \$2,022 for a 350MHz processor system and \$3,285 in a 400MHz configuration.

Circle & FASTRAK #185

CHOOSE YOUR VISION

Available in two models, Hitachi's VisionBook Pro 6000 notebook series supports Windows 95/98/NT. The notebooks incorporate a single 266MHz Pentium processor, a 12.1-inch TFT display, and 32MB RAM (expandable to 128MB).

Standard features include a 3.2GB hard drive, 24X CD-ROM drive, IrDA 1.1 infrared, a USB port, and a 1.44MB floppy disk drive. You get to choose between two Type II PC Card slots or one Type III, and between integrated 10/100 BaseT LAN or a 56k modem. The list price is \$2,599.

Circle & FASTRAK #186

Gateway Makes Pentium II Processor of Choice

Gateway's GP-Series system line now comes standard with Pentium II processors. You can choose from workstations sporting 266MHz to 400MHz Pentium IIs based on Intel's 440LX chipset. Each system comes with an EV monitor, either a 4MB or 8MB AGP graphics card, 32MB to 128MB SDRAM, a 32X CD-ROM drive, Microsoft Office 97 SBE, Windows NT, and an Ultra ATA hard drive with 5GB to 10GB storage space. Pricing ranges from \$1,499 to \$2,999.

Circle & FASTRAK #187

Power Path

Microsoft, Intel, and the Department of Justice

by Ron Eggers

If Microsoft's Bill Gates and Attorney General Janet Reno were to square off in the ring, I'd put my money on Reno. She's tough, tenacious, and has a good foot on him in height. Well, while Gates and Reno aren't squaring off with gloves on, they have stepped into the ring to do battle. If the Department of Justice's record on pursuing antitrust litigation is any indication, my money is on billionaire Bill.

The DOJ's suit against the software giant claims anticompetitive practices in the distribution of Microsoft's Internet Explorer. The reality is, Microsoft controls the lion's share of the operating systems market.

That gives Microsoft unparalleled opportunities to influence the programs that run on its operating system and those that take advantage of the Internet, online services, and businesses yet to be thought of. That's exactly the issue. The DOJ doesn't care whether the average user goes on line with IE or Netscape. What it and the Federal Trade Commission are trying to do is ensure that Microsoft doesn't control the future of online commerce by its ability to control access to it.

The DOJ suit should come as no surprise. The government has always had a love/hate relationship with high-tech firms. It has attacked such giants as AT&T, and the previous 800-pound gorilla of the computer industry, IBM, at the same time these companies were being put onto pedestals by the Commerce Department and other federal agencies as examples of American corporate prowess.

The love/hate relationship continues with Microsoft. Bill Gates plays golf with President Clinton while Janet Reno is hauling his company to court. It's a great soap opera. The Microsoft suit is important for the future of online commerce and who will control it, but it really won't have a big impact on system buyers.

Another case that the DOJ and FTC are looking at will have a much more direct impact on computer buyers, even if it never goes to court. The FTC

is looking at Intel and its control of the microprocessor market with its Pentium chips. Intel has overwhelming control of the CPU market, with some 70 to 80 percent of all PCs running Pentium processors.

One reason that PC prices are low is that CPU prices have dropped significantly. And that's due directly to competition from companies like AMD and Cyrix. These companies have developed profitable market niches, sometimes with Intel's blessings, sometimes without. The web of CPU cross-licensing agreements and joint development projects has made it more difficult for Intel to keep margins on its products up, as other companies release lower-priced products.

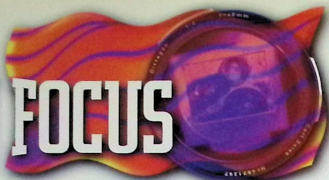
Understandably, Intel doesn't like that. Strategies are supposedly being developed within the company to recapture some of the lost market segments. According to the FTC, that's being accomplished by such anticompetitive practices as restricting products to system vendors that also use competing products, undercutting prices, and limiting technology access. There have been some claims that current CPU prices, and resultant system prices, are as low as they are to drive smaller chip makers out of the market by cutting margins to levels they can't maintain over the long run.

With its dominant position, Intel can maintain tight margins until the competition drops out. If that happens, and the few remaining clone CPU makers drop out, PC buyers will suffer. It will mean higher prices for CPUs and higher prices for systems, particularly the high-performance systems required for imaging, graphics, and multimedia.

The fact that the government is looking at Intel's marketing practices may prevent some of those anticompetitive practices, even if no litigation is ever filed. So enjoy the Microsoft/DOJ battle, but keep a watchful eye on Intel, because what it and the government do will have a direct impact your pocket book.

Ron Eggers is a senior editor with NewsWatch Feature Service. He can be reached online at 71218.3556@compuserve.com.

IN FOCUS

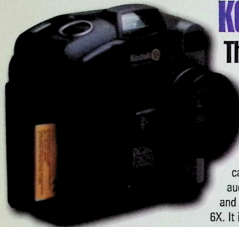


Digital cameras and peripherals

edited by Maya Cointreau

MOTOROLA PROCESSOR BRINGS KODAK UP TO SPEED

Thanks to PowerPC 800



The Kodak Digital Science DC260 digital camera uses a Motorola PowerPC 800 series processor to speed image processing, according to Kodak. Shipped with Kodak Digital Science 3.0, Adobe Photo-Deluxe, and Adobe PageMill software, the camera also features 1.6 million pixel resolution, audio recording, scripting capability, flash syncing, and a 3X optical zoom that is digitally extendable to 6X. It is priced at \$999.

Circle & FASTRAK #188

Don't Miss That Shot!

Lexar Media Announces Full Line
Of Convenient High-Performance
Memory Cards

Lexar Media has announced a full line of Digital Film Packs, high-performance memory cards for digital cameras. Digital Film Packs are available in both CompactFlash and SmartMedia formats.

The film packs allow you to conveniently swap out full memory cards, rather than erase important images. Pricing for 4MB CompactFlash Film Packs begins at \$79.99, and 4MB SmartMedia Film Packs are priced at \$49.99.



Circle & FASTRAK #189

Olympus' Digital Photo Studio

Olympus has released the Digital Photo Studio, combining the Olympus CenturionS Advanced Photo System camera with the ES-film scanner, to allow easy conversion from film to digital, according to the company.

The CenturionS features an 11-element, all-glass, 4X zoom SLR lens with focal lengths of 25mm to 100mm, a 12-second timer, and mid-roll film change capability. Advanced Photo System film remains in its canister, to be fed automatically through cameras and scanners.

The ES-10 film scanner scans color or black-and-white film, using the 24-bit color Super Latitude Scanning system, and provides 2.1 megapixel resolution. The list price is \$899.

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EPSON JOINS MEGAPIXEL CAMERA CLUB

With 1280 x 960
PhotoPC 700

Epson has delivered its first megapixel camera, the PhotoPC 700, which uses a 1.25 million pixel sensor to deliver 1280 x 960 pixel resolution.



According to the company, the camera can capture images in several picture modes, including full size, panoramic, macro, 2X zoom, and Continuous Shoot VGA, all in 16.7 million colors or black and white. The 2X digital zoom and panoramic picture modes enable you to "crop-on-the-fly" to minimize file sizes.

Other features include Fast Erase, a Tiffen lens adapter that enables you to attach a standard 37mm wide angle or telephoto lens, a two-inch active matrix color LCD monitor, playback mode, video output capability, and Epson's Direct Print software and cable. The PhotoPC 700 comes with 4MB internal memory, and supports CompactFlash memory cards. It ships with Sierra Imaging's Image Expert image editing and management software. It is available for \$699.

Circle & FASTRAK #191

SOHO: Addressing Small Business Needs

SOHO, from LivePix, combines professional photo-based templates, photo-editing tools, and a database of hundreds of photos to target small business imaging needs. It features the full functionality of LivePix 2.0 Deluxe, with automatic color correction, contrast adjustment, cloning, red-eye removal, and support for 17 file formats.

Also included is Novita LiveLetter, a Java-based multimedia email application, and a sample kit of Kodak Digital Science inkjet photo paper. Supporting Windows 95/98, SOHO is priced at \$49.95.

Circle & FASTRAK #192

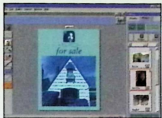


Photo Base Deluxe Organizes Your Images

AxisSoft has released Photo Base Deluxe 1.2 for Windows 95, a program for organizing your pictures into a database using up to 24 categories, while maintaining the original file format of the pictures. Batch processing allows you to send a selection of images, based on the category you choose, to the printer or disk in the image format you specify. A single user license costs \$49.95.

Circle & FASTRAK #193

ADAPT YOUR CARDS Read CompactFlash Cards with GS-FAC-10 FlashAdapter

Greystone Peripherals has introduced the GS-FAC-10 FlashAdapter, which allows digital camera CompactFlash cards to be read in any notebook or desktop PC with a PC Card slot, according to the company.

Just plug the GS-FAC-10 into a standard Type II or III slot, and read or download images straight off the card. The GS-FAC-10 FlashAdapter is priced at \$29.95.



Circle & FASTRAK #194

Your Eye's on It

Eastman Kodak's New Frontiers

by Don Sutherland

Eastman Kodak is the pioneer in digital cameras, having introduced the first professional digital SLR in 1992.

And you know about pioneers—they're the ones with the arrows in their backs. So, Kodak has sent in more troops. In fact, since the beginning of this year, the company has announced six new digicams. That's more than most manufacturers have in their entire lines.

The new Kodak products touch every segment of the market, from the snapshot to the high-end professional, and reaffirm the company's confidence in the digital trail it has blazed.

One of the new cameras, the DCS 520, was so impressive, on paper at least, that I did something unprecedented: I devoted an entire column to it in March. I was working from spec sheets, but since then I've tested a pre-production model. It delivered results superior to any camera I've used in its price range (about \$15,000).

In a shot of an ocean liner, for example, the bright-white superstructure revealed as much detail as the black hull below.

Call it latitude, dynamic range, key-to-fill ratio, it all means the same thing—this camera resolves highlight and shadow detail almost like film.

While cameras often are promoted by their pixel counts, that's only one measure of picture quality. With all the pixels in the world, you would not get good photos if the brights burned out and the darks filled in, concealing all the porches. Dynamic range (or D-MAX) is the spec-du-jour in scanners, and should be in digital cameras, too.

Days before this went to press, Kodak Professional announced two more digital SLRs.

One is similar to the DCS 520, but has even more pixels. The DCS 520 delivers 1728 x 1152, or just about two megapixels.

The newer DCS 560 has six megapixels with an output that comes

closer to 3000 x 2000. Using the same downsized form as the 520, the 560 should replace Kodak's earlier flagship, the EOS DCS 1.

An improved CCD, doubled ISO, anti-alias filter, LCD monitor, histogram display, and quicker burst rate further distinguish the DCS 560 from its predecessor. The price is about the same, around \$28,000.

Kodak Professional's other eyebrow-raiser is the DCS 315, the first digital SLR based on an APS (Advanced Photo System) camera body, the Nikon Pronea. APS film cameras are generally smaller than 35mm cameras, a favor most welcome in digicam conversions. (All the digital SLRs are larger than their film counterparts.) The digitized Pronea uses the same CCD (1.5 megapixels at 1524 x 1012) as the well-known DCS 420 model.

Including an LCD display, the DCS 315 is meant to clear the field for a new market. At less than \$6,000, it brings SLR features to those who could not quite afford professional digicams before.

Kodak's consumer division, meanwhile, announced three point-and-shoot digicams—two likely to raise the performance bar in the sub-\$1,000 market.

The new DC220 camera has the same lens (currently the widest wide-angle zoom of any digicam) and the same one-megapixel CCD as the still-current DC210, in a new body. A Motorola PowerPC 800 series processor is built-in to accelerate image processing.

The new DC260, meanwhile, brings the highest pixel count to date in its price range: 1.6 megapixels. The DC220 and DC260 are priced at \$799 and \$999, respectively.

Along with the DC200, a non-zoom counterpart of the DC210, Kodak's portfolio of digital cameras is the largest in the world.

Reminder: They also make film.

Contributing editor Don Sutherland operates Sutherland Multimedia (Staten Island, NY). He is the author of several books and has been writing about imaging since 1987.

SOUNDSCAPE

Audio technology and news

edited by Amy Woods

ALTEC LANSING SPEAKERS SHIP WITH DOLBY DIGITAL TECHNOLOGY

Prices Range from \$199 to \$499

The ADA305 home audio system from Altec Lansing Technologies is equipped with Dolby Digital Pro Logic technology, as well as Altec's "side-firing" design.

The system includes two 10-watt footprint satellite speakers and a 24-watt subwoofer. USB controls plus Altec Lansing Audio Management

There are five satellites—left, right, center, and two surrounds, each delivering 20 watts—and a 30-watt subwoofer.

The ADA600 includes S/PDIF input on the subwoofer for Dolby Digital AC3



streaming output, without the need for a DVD decoder or receiver, according to the company.

Software are included with the product. The list price is \$199.

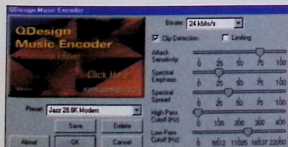
Also shipping is the ADA600 home theater system, which features Dolby Digital Surround technology in a six-piece system.

The list price is \$499.

System requirements are Windows 95, a USB port, a CD drive, and a 10MB sound card.

Circle & FASTRAK #176

QDesign Releases Professional Audio Tool, Music Code PRO, for QuickTime 3 Authoring



A professional audio production version of QDesign's music codec for QuickTime 3 authoring enables developers to shrink music files to one percent of their original size, according to the company.

The tool, QDesign Music Code PRO, offers a suite of encoding features including 350:1 compression, encoding from 8kHz to 48kHz and for 4k to 128k, and delivery of full-bandwidth 44.1kHz stereo sound over a 28.8k modem, the company said.

The list price is \$399.

A basic edition of the codec also is available as a standard component of the QuickTime 3 format.

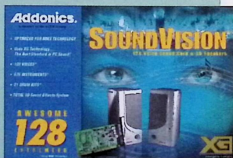
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Addonics Makes Noise With Two 'Awesome' Sound Solutions

Addonics Technologies has released a 3D audio kit for the PC that features a 128-voice, PCI-based sound card, a set of speakers, and a microphone.

The SoundVision Awesome 128 Extreme is bundled with Yamaha's XG software wavetable synthesizer, which includes XG Studio and Media Player. The list price is \$99.99.



The company also is shipping the SoundVision Awesome PCI, a 64-voice audio accelerator with a 32-bit PCI bus master system interface. The card supports the DirectSound and A3D standards, and includes such special effects as reverb, chorus, flange, echo, and 3D spatial enhancement, according to the company. It is bundled with MixMan's 3-Mix, Midisoft's Studio LE, and Multimedia Doctor-MPC Smart Guide. The list price is \$49.99.

Circle & FASTRAK #177

PCI-Based Accelerator Trident's '4D' Audio Chip Ships

Trident Microsystems' 4D-WAVE-DX audio chip provides PCI-based audio with 64-voice wavetable synthesis; chorus, reverb, and echo effects; DLS support; and DOS compatibility, according to the company.



The chip has been optimized for Windows 98 and NT 5.0, and will support DirectX 3D positional audio through QSound Labs' QSoft3D technology.

Other features include a 90dB signal-to-noise ratio and an internal 26-bit digital mixer with 20-bit digital audio output, the company said. The product is aimed at the computer gaming market.

Circle 6 FASTRAK #179

PROFESSIONAL-LEVEL POWER FOR PCs WITH DSP FACTORY

Yamaha Corp. of America's DSP Factory audio card gives PC users a multitrack mixer and recorder that includes features from the powerful Yamaha O2R.

Among those features are a 24-channel, 32-bit mixer, 104 bands of parametric EQ, and two effects processors

equal in quality to its REV500 product, according to the company.

It also offers 16-track, 32-bit recording and playback, and has five of the company's proprietary DSP

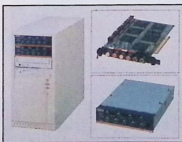
chips on the card for performing all mixing functions, the company said.

The AX44 audio expansion unit, or breakout box, also is available, offering four analog inputs and outputs. Two units can be connected to one card.

Several software companies, including Cakewalk, SEK'D, Sonic Foundry, and Steinberg, have announced future product support for DSP Factory.

The DS2416 card lists for \$999 and the breakout box lists for \$299.

Circle 6 FASTRAK #180

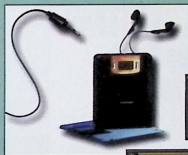


Sound Waves

Miniature MPEG-3 Player Makes Waves at SXSW Interactive

by Amy Woods

A portable MPEG-3 audio player has come onto the market, and its creator, Nordic Entertainment, predicts the device will do for digital sound files the same thing the Sony Walkman did for cassettes and compact discs.



Nordic Entertainment's "mp man" can store up to an hour's worth of downloaded music.

The \$499 "mp man" can store up to an hour's worth of downloaded music and play it back on a PC, a home or car stereo, or headphones. There are no moving parts, it connects via a parallel port or an output jack, and is "smaller than a pack of cigarettes," said Kent Kiefer, founder of the Napa Valley, CA-based company.

"This device is just a way for you to take that music and liberate it from your computer," Kiefer said. "It allows you to take a song and squish it to one-tenth of its original size and still have CD quality."

A 64MB flash memory card manufactured by Samsung stores the MPEG-3 files. (A 32MB version also is available for \$299.) A software utility called WinAMP provides the playback.

It comes with a parallel port printer cable, a car stereo adapter, a set of headphones, and a couple of rechargeable batteries that are good for up to nine hours, Kiefer said. The device is compatible with Windows 95/NT.

"The response has been overwhelming," he said. "The bottom line is we're having success and people are using it."

First demonstrated at a panel discussion during the South By Southwest Interactive festival in Austin, TX, "mp man" created somewhat of a buzz among the attendees, according to event director Hugh Forrest.

"It was a very well-attended panel and the people there were very impressed," Forrest said. "My impression was that it was very interesting."

The panel, titled "Future of Music Distribution," was one of several during the four-day festival that focused on the implications of the sale and delivery of music over the Internet.



The technology that Kent Kiefer demonstrated shows that

we are getting to that point where record stores are not so much obsolete, but are a factor in the equation we are studying," Forrest said.

Kiefer knows first-hand about the implications the technology is having.

- Companies can sell songs at a fraction of their cost because the same songs can be sold over and over again.
- Users can select a particular song for downloading instead of having to buy an entire album.
- The overhead associated with manufacturing, packaging, warehousing, and shipping can be eliminated.

Nordic Entertainment—"a record company that went digital," Kiefer said—sold its first song over the Internet in 1997.

"We went purely into the digital domain because it is the future," he said. "The decline of physical media is here because of this technology."

Amy Woods is associate editor of *PC Graphics & Video*. She can be reached online at awoods@pcgv.com.

CYBER PUBLISHING

Web imaging news and information

edited by Amy Woods

IMAGEREADY 1.0 SHIPS FROM ADOBE SYSTEMS

Web Tool Features Batch Processing of Graphics

Batch processing of Web graphics is only one of the features of Adobe ImageReady 1.0. Others include LiveView, a window that enables designers to balance file size and image quality by viewing both the original and optimized versions of the same file; Animation, a palette that lets you edit GIFs without exiting ImageReady, and also has a Tween option for automatically generating new frames; Droplet, a feature that processes any image you "drop" onto it in accordance with the settings you have provided; and History, a palette that keeps track of every compression scheme you've tried.



A subset of familiar Photoshop image editing tools (marquee, lasso, eraser, pencil, paintbrush, and eyedropper) is included. It also offers resizing, image adjustment, and filter capabilities. Another feature is the capability to handle alpha transparencies for the next generation of PNG files, according to the company. The list price is \$299.

Circle & FASTRAK #199



Mitsubishi Division Develops Internet/Intranet Video App

Living up business presentations and sales pitches is the focus of a software tool developed by Mitsubishi Electric America. VisualSHOCK MOVIE enables content creators, whether developing for corporate presentations or for the Web, to add hotspots to video clips. The Movie MapEditor uses Mitsubishi's motion recognition system technology in an easy-to-use interface that supports AVI, QuickTime 2.0, and MPEG-1 file formats. It also works with most ActiveX-compliant applications, including PowerPoint 97, according to the company. The list price is \$99.

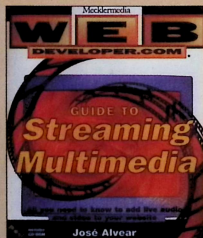
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Book Offers Web Developers Guidance On Streaming Multimedia

Web Developer.com Guide to Streaming Multimedia, 430 pages, \$44.99. Author Jose Alvear, a freelance writer specializing in Web multimedia and streaming technologies, provides a hands-on guide for enhancing Web sites with live audio and video in his book, *Web Developer.com Guide to Streaming Multimedia*.

Alvear explains the concept of streaming, examines its advantages and disadvantages, and offers tips on choosing software and hardware. An enclosed CD-ROM allows you to practice the techniques in the book with versions of audio and video editors, includ-



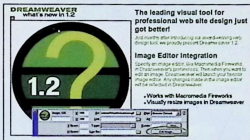
ing Sonic Foundry's Sound Forge and MGJ Software's VideoWave.

Entire chapters are devoted to the most popular file formats: VDOlive, NetShow, RealAudio and RealVideo, and StreamWorks. In the last chapter of the book, Alvear discusses interactive television, videoconferencing, and bandwidth issues, and predicts 10 developments that will change the streaming industry in the future.

Circle & FASTRAK #197

Dreamweaver 1.2 Update Supports Dynamic HTML

The next version of Dreamweaver has been released by Macromedia, offering Dynamic HTML support and compatibility with 4.0 browsers.



The Web page design tool also supports layers and cascading style sheets, and includes a function that converts pages for viewing with 3.0 browsers.

Dreamweaver 1.2 has an enhanced library of JavaScript behaviors, such as check browser, drag and drop layers, and pre-load images. By using the Drag Layer feature, for example, developers can assign individual properties to specific layers without coding, according to the company.

The list price is \$299. Dreamweaver 1.0 users can upgrade for free.

Circle 6 FASTRAK #195

Web Designers Can Reduce File Sizes With BoxTop Software's Tools

BoxTop Software's ImageVise application gives content creators a color-reduction and compression tool that solves the problem of bloated graphics files on the Web, according to the company.

The Adobe Photoshop filter enables Web pages to load up to three times faster while containing three times the content in the same space, the company said. The technology makes GIF, PCT, BMP, and PNG files as much as 70 percent smaller.

The list price is \$49.95.

Also available from BoxTop Software

is PhotoGIF Filter, another Photoshop plug-in that offers color reduction, live image preview, and transparency tools including eye dropper, brush, and edge, according to the company.

The list price is \$69.95.

Circle 6 FASTRAK #195

Web Worx

Support Streaming in for RealNetworks' RealSystem G2 Internet Multimedia Tool

by Amy Woods

More than 100 companies have struck licensing agreements, bargained bundling deals, and planned new products around RealNetworks' RealSystem G2 "next-generation" multimedia streaming tool.

The announcements at RealNetworks Conference 98 in San Francisco, CA, generated a flurry of press releases touting RealSystem G2 as a break-

through technology that will usher in a new era of audio, video, text, graphics, and animation on the Web.

Industry hype? Definitely, said Joan Carol Brigham, an International Data Corp. analyst.

"But for RealNetworks, they're in a position to pull this off," Brigham said.

"They're trying to establish themselves as the backbone, and they're allying with these companies so they can create a momentum."

Among the companies RealNetworks has allied with are software developers Digital Renaissance, Iterated Systems, Live Picture, and Veon; hardware vendors DEC and Intergraph; intranet providers including Asymetrix and Live-Training.com; and a handful of e-commerce services.

A stream of content creation tools based on G2 are poised to emerge when the product ships later this year. Live Picture, for example, plans to integrate its Live Picture Image Server with the G2 server to enable zoomable, high-resolution FlashPix images that can be synchronized with RealAudio.

"The Internet is a pretty quiet place right now and this is a perfect complement of products," said John Ison, Live Picture's vice president of marketing.

Live Picture technology, which runs on Windows NT and Solaris, was used by E! Online for a "Farewell to Seinfeld" auction that let viewers zoom in on images of memorabilia up for bid.

Veon (formerly Ephyx Technologies) will ship a new version of V-Active called VeonStudio. The Windows 95/NT-based tool will produce hotspots within RealVideo files, and also will build on-the-fly RealVideo using a template method. "It's sort of like doing a mail merge except with multimedia," said Adam Stock, Veon's vice president of marketing.

Features in G2 include two new streaming media types—RealText and RealPix—and support for Synchronized Multimedia



VeonStudio Web tool will support RealSystem G2.

Integration Language proposed by the World Wide Web Consortium.

RealNetworks also has developed SmartStream technology, which automatically scales files to available bit rates.

"There are comments made on how much of a quantum leap G2 is over RealSystem 5.0," RealNetworks product manager Kevin Epstein said. "We're really going to see the market take off."

Digital Renaissance, developer of T.A.G. technology, also announced support for G2 authoring. Content creators using T.A.G. to generate a RealText file would be able to add scrolling, font, and color effects to a presentation, or could apply transitions and overlays to a RealPix file.

Iterated Systems, which worked with RealNetworks to develop RealPix, plans to license its STING digital imaging technology for use with G2. The agreement will result in bandwidth-scalable, streaming slide shows over the Internet, according to the company.

"We've just opened up exponential possibilities for streaming multimedia," Epstein said. "Developers can choreograph rich presentations and are no longer restricted to a binary choice."

Amy Woods is associate editor of PC Graphics & Video. She can be reached at awoods@pcgv.com.

GRAPHICS GEAR

HOT NEW
PRODUCTS AND
SOLUTIONS
edited by Maya
Cointreau

PAINT SHOP PRO ENHANCES IMAGING

**Offers Support for
More Than 40
File Formats**



Paint Shop Pro 5 from Jasc Software incorporates Adobe Photoshop plug-in support and GIF animation. Features include multiple layer support, retouching and imaging tools, support for selected digital cameras, and unlimited multiple-level undo options. Paint Shop Pro 5 also supports more than 40 graphic file formats. It is priced at \$99.

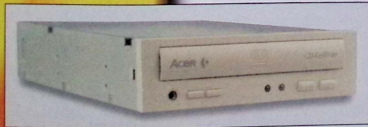
Circle 6 FASTRAK #159

Acer's Internal CD-ReWritable With Digital Servo Control

Acer Peripherals America has released the CRW6206A, an internal ATAPI IDE CD-ReWritable drive offering 2X write and 6X read capabilities. It features digital servo control that automatically adjusts the gain/offset to ensure accurate reading and writing of data, and an automatic eject feature that ejects the CD in the event of a power failure.

It offers volume controls, a play/skip button, a power LED and headphone jacks. It is priced at \$349.

Circle 6 FASTRAK #160



QUANTUM VIKING II SAILS WITH DUAL MODE SCSI

**Optimized After Broad
Compatibility Testing**

The Quantum Viking II has been optimized, after broad compatibility testing, for host-adaptor products including Adaptec, ATTO Technology, Diamond Multimedia, and Symbios Logic. Its new hard drives are configured in 9.1GB and 4.5GB. Dual mode, Ultra2 SCSI/Ultra SCSI models enable you to take advantage of the current SCSI bus transfer rate of 80MB per second, while maintaining compatibility.



with most earlier Quantum drives, according to the company.

Additional specifications include an average seek time of 7.5ms, a rotational speed of 7200rpm, and an internal data transfer rate of 170MB per second.

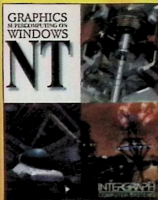
Triple-burst Error Correction Code technology and Smart Revision 2 maintain data availability and integrity. Retail prices for the 9.1GB and 4.5GB drives are \$895 and \$595, respectively.

Circle 6 FASTRAK #161

Graphics Terms in One Convenient Book Graphics Supercomputing on Windows NT

This book is a comprehensive glossary of terms related to computer graphics.

From aspect ratios and anti-aliasing to frame buffers and Z buffers, all the terms related to graphics are here, with explanations and samples of what they do.



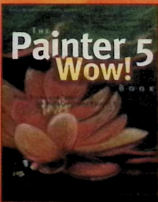
Also included is a generous number of color images to help illustrate terms in the book. It is priced at \$49.95.

Circle 6 FASTRAK #167

Painter 5 Tips, Tricks The Painter 5 Wow! Book by Cher Threinen-Pendarvis

This book discusses all the latest features in Painter 5 from MetaCreations.

It includes descriptions of how prominent digital artists use the software in fine art, multimedia, film, and other media.



It comes with a CD-ROM that features custom brushes, textures and papers, recorded scripts, and images. It is priced at \$44.95.

Circle 6 FASTRAK #168

Pinnacle Systems' Studio 400 Sports 100 Transitions, MS DirectShow

Pinnacle Systems has introduced Studio 400 for Windows 95, offering Instant Play Back using Microsoft's DirectShow technology for real-time video editing.



Features include more than 200 professional titling styles, 100 transitions, Sonic Desktop's Smart-Sound for creating musical soundtracks, the capability to output to videotape, and Microsoft's Net-Meeting. Studio 400 is priced at \$199.

Circle 6 FASTRAK #162

SynchroMaster 400 Boasts Line Doublers

RGB Spectrum has announced the upcoming release of the SynchroMaster 400, a multimedia display processor that combines the capability of a variable line interpolator with that of a signal synchronizer. According to the company, switching between video and computer signals occurs without glitches. Line doublers and quadruplers allow you to expand the number of lines of video to fill large screens, with programmable output timing to optimize the video signal. The SynchroMaster 400 will accept computer signals with up to 1280 x 1024 screen resolutions, and video input signals including NTSC, PAL, and CCIR 601 digital serial video. It will be priced at about \$1,500.

Circle 6 FASTRAK #163

FROM ANALOG TO DIGITAL, MCM TURNS TAPES INTO CDS

Vitec Multimedia's MPEG-Cut Machine (MCM) combines MPEG real-time encoding, frame accurate editing, and authoring software for producing Video CD 2.0 and CD-ROM formats directly from videotape or laserdisc. Shipped with Vitec's RT5-TV encoding board, the MCM runs on Windows 95 PCs. It is priced at \$1,295.

Circle 6 FASTRAK #164

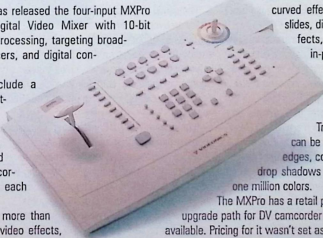
FOUR-INPUT, 10-BIT DIGITAL VIDEO MIXER FOR LESS THAN \$2,000

Product Offers Dual-Field Time Base Correction

Videonics, Inc. has released the four-input MXPro Professional Digital Video Mixer with 10-bit (4:2:2) digital processing, targeting broadcasters, film producers, and digital content creators.

Specifications include a signal-to-noise ratio better than 60dB, a bandwidth of 5.5MHz, built-in dual-field time base correction, and manual RGB color correction settings for each video channel.

The MXPro offers more than 500 different digital video effects, including both straight-edge and



curved effects, fades, wipes, slides, dissolves, trailing effects, multiple picture-in-picture, picture flip, and chroma key, as well as superimpose and movable mosaic.

Transitions and PiPs can be enhanced with soft edges, colored borders, and drop shadows using a palette of one million colors.

The MXPro has a retail price of \$1,799. An upgrade path for DV camcorder users will soon be available. Pricing for it wasn't set as of press time.

Circle 6 FASTRAK #165

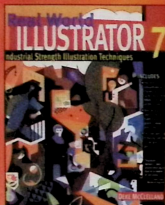
IN PRINT

Illustrator 7 Book Features Step-by-Step Project Instructions

Real World Illustrator 7, by Deke McClelland

This book, from Peachpit Press, discusses the latest tools and features in Illustrator 7, while offering step-by-step instructions on how to create color projects with Adobe's latest illustration software.

It offers tips and insights on the application for both the beginning user as well as the seasoned expert.



Part one of the book contains three chapters that discuss the new tools and palettes, the new file formats, and how Illustrator differs from other graphics applications on the market.

Part two is five chapters in length and discusses how to create basic type and graphic elements using the latest polygon, star, pen, and spiral tools, and Bezier curves. Also covered is creating and editing text.

Part three discusses how to cut apart lines and shapes, and how to put them together again.

Other topics include using compound paths and Pathfinder filters, as well as Illustrator's transformation and special effects capabilities.

Part four offers an overview of color, how to use color, and how to get the best color out of the application.

It is priced at \$29.95.

Circle & FASTRAK #166

Epson Ships Color Proofer with Fiery RIP Pro 5000 Can Output Large-Format Proofs in Minutes

Epson has released the Epson Stylus Pro 5000, a digital color proofing solution that combines an Epson Stylus Pro 5000 printer with an external EFI Fiery file server using Adobe PostScript 3.

The Stylus Pro 5000 can image a 13 x 19-inch color proof in four to 25 minutes depending on media size.

It uses MicroPiezo DX3 inkjet technology with a six-color ink system, including cyan, magenta, yellow, light cyan, light magenta, and black. It prints at 1440 x 720dpi, 720 x 720dpi, and 360 x 360dpi, and accepts up to 200-pound stock.

The printer uses high-capacity ink cartridges, sports auto ink and paper level indicators, and uses source, size, and type detection systems to



help improve your print jobs, according to the company.

The EFI Fiery server contains a 133MHz 64-bit MIPS R4700 RISC processor, 32MB RAM, and a 2.1GB internal IDE hard drive.

It comes with 100/10BaseT and 10Base5 AUI Ethernet, Ether-

net, TCP/IP, Novell IPX, parallel, SCSI II, serial, BNC, RJ45, and USB connectivity, and a single PCI slot for future upgrades.

For color management, the Epson Stylus Pro 5000 uses its AcuPhoto halftoning module with DuPont's professional proofing media.

It offers standard color rendering dictionaries for Imation MatchPrint III, Fuji Color Art, and DuPont WaterProof Analog Systems. It is priced at \$9,995.

Circle & FASTRAK #169

Liquid Pics By Softdyne Is Released Image Editing Tool That 'Tweaks' Images

Softdyne Systems has released Liquid Pics, an image editing tool that enables you to tweak an image into a new one that is different from the source image.

Liquid Pics also offers basic image editing and enhancing capabilities for modifying brightness and contrast, and enables you to rotate, flip, and resize your photos.

Once you create changes to an image, you can save them as AVI files.

Recommended system requirements are a Pentium processor with MMX technology, 32MB RAM, Windows 95, 24-bit graphics adapter, CD-ROM drive, mouse, image input device such as a scanner, and 30MB free hard disk space. It is priced at \$24.95.

Circle & FASTRAK #170

MASTER PHOTOSHOP 4.0 WITH TRAINING VIDEOS

Desktop Images has released a series of training videos for Adobe Photoshop users that offer instruction in Photoshop on subjects ranging from basic imaging to complex compositing in Photoshop 4.0.

"Photoshop Essentials" offers an overview of the features in Adobe Photoshop 4.0 and the system requirements necessary to successfully run the application. It features topics such as optimizing setup commands, color and density correction, keyboard shortcuts, selecting complex shapes, creating drop shadows, and applying special effects. It is priced at \$49.95 and has a 120-minute run time.

"Photoshop Creative Compositing" discusses Photoshop 4.0's layering and blending features and offers project-oriented instruction on working with layer and channel masks for creating non-destructive effects, quick mask techniques, working with clipping groups, and alpha channel and image cleanup and enhancement. It is priced at \$49.95 and has a run time of 110 minutes.

Both videos include a time-coded reference card for locating subject matter on the video for quick review.

Circle & FASTRAK #171



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NAB '98

PRIME TIME PRODUCTS Awards Given to Innovative Products

Each year at the NAB and Siggraph conventions, the editors of *PC Graphics & Video* and *Digital Studio* magazines select 10 products from the fray for the Prime Time Products awards.

The awards are given to new products, based upon innovative features designed for the video and animation professional. At NAB'98, the competition was fiercer than ever, making the decision about the final 10 Prime Time winners the most difficult one since the awards were launched three years ago. The winners are as follows:

Adobe Systems—Premiere 5.0

Now in version 5.0, Premiere is aimed at previsualization, storyboarding, and online and offline editing for corporate, broadcast, and film work. Professional features include improved video output options, 29.97fps for true video editing and audio synchronization, improved EDL support, a redesigned video editing interface, three-point editing, long-format editing support, and better tiling capabilities. Windows 95/NT, and Mac.

Alias | Wavefront—Maya

Maya is a completely customizable animation environment that aims to lower the wall between artists and technology. New animation and modeling tools abound in Maya, and beneath it all is Maya Embedded Language (MEL), a text-based script that makes it easy to create expressions and make custom tools. Four expansion modules are already available: Maya Artisan, PowerMod-

eler, Maya FX, and Maya Live. Windows NT and SGI.

Apple Computer—QuickTime 3 Pro

QuickTime 3 Pro is a digital media technology platform that integrates 3D animation, streaming video and audio, real-time special effects, and virtual reality. It offers digital video and audio editing capabilities with cut and paste, plus the capability to prepare and compress content for streaming delivery from any Web server. QuickTime 3 Pro supports more

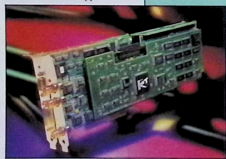
This year's crop of Prime Time Products is more robust than ever.

Kinetix—3D Studio MAX R2.5

This upgrade, six months after the release of 3D Studio MAX R2, includes significant new features tailored for game developers and entertainment producers. Among these are advanced camera tracking—



At left: The Perception RT board from DPS. Above: Puffin Designs' Commotion.



than 150 SMPTE-approved video effects and transitions and more than 35 file formats. Windows 95/NT, and Mac.

DPS—Perception RT

The DPS Perception RT is a dual-stream, real-time, non-linear editing system that features a dedicated onboard Ultra Wide SCSI controller and video I/Os that support component, analog, SDI, and DV. For editing, the DPS Perception comes with DPS Video Action RT—real-time editing software that integrates video capture, editing, and real-time

playback with synced audio and video, and offers more than 200 effects and transitions. Windows NT.

playback with synced audio and video, and offers more than 200 effects and transitions. Windows NT.

- Adobe Premiere 5.0
- Alias | Wavefront Maya
- Apple QuickTime 3 Pro
- DPS Perception RT
- Kinetix 3D Studio MAX R2.5
- Media 100 Finish
- Pinnacle Systems Reel Time
- Puffin Designs Commotion
- Side Effects Software Houdini
- Spruce Tech. DVDMaestro

titling, audio EQ and crossfades for DV and analog media. It supports 720 x 486 resolution. Windows NT.

Pinnacle Systems—Reel Time

Dual-stream video capture card with onboard, real-time effects. It comes with Adobe Premiere 4.2. Windows NT.

Puffin Designs—Commotion

Commotion is a real-time instant feedback paint and effects application that offers paint over time and filter effects, integrated with rotoscoping and compositing tools. Uncompressed, full-resolution video and film are playable in real time. Windows NT and Macintosh.

Side Effects Software—Houdini 2.5

Houdini combines 3D animation, surface modeling, materials, lighting, rendering, and compositing in one environment. NURBS, Bézier, polygons, metaballs, and particles are tightly integrated.

New in version 2.5, POPs (Particle Operators) can build sophisticated particle behaviors without the need to write scripts or type expressions. The click-drag-and-connect interface lets users build networks of particle operators to generate flocking, splashes, spawning, collisions, and chasing behaviors. Windows NT and SGI.

Spruce Technologies—DVDMaestro

DVDMaestro is designed for use without extensive training, but has the full power of the DVD Spec 1.0 behind it. DVDMaestro handles video and audio compressed streams, subtitles and menu art, and disk layout and writing to a DLT tape for replication.

It comes as a set of linked software modules, and is supplied with bundled hardware. **PCGV**

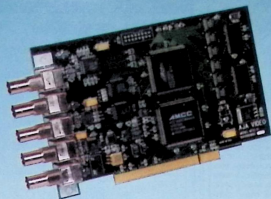
building on the camera plate tools added in R2—for match-cutting camera motion.

Also, R2.5 incorporates a direct link into Discreet Logic's Paint and Effect, enabling users to import scenes between the programs and composite 2D vector and raster data with 3D MAX scenes in a single preview and rendering process. Windows NT.

Media 100—Finish

Media 100 brings its expertise to Windows NT with Finish, a digital video authoring system that integrates DV and broadcast standards with real-time functionality.

It will feature dual-stream transitions, color effects, static picture



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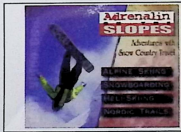
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I haven't heard any evidence that the core Windows 98 code hampers competitive browsers.

J. V. Bolkan

FINALFRAME



Monopoly? Maybe

Reading this in July, you probably know more about how the battle between the government and Microsoft is shaking out than I do, writing about it in early May. Nonetheless, the basic facts shouldn't shift in that short time. I am no lawyer, and antitrust law is fairly convoluted. Still, there seem to be some real problems with the case.

The biggest problem is that I have yet to hear any charges against Microsoft that show it is behaving in the classic monopoly mode. Prices for its Windows OS are low and have been stable all the way back to the DOS days.

I haven't heard any evidence that the core Windows 98 code hampers competitive browsers. In other words, Netscape and others are free to write Windows versions of their software. True, you can't buy Windows 98 without getting Internet Explorer, but that is true of many OS components, such as image-viewing routines, text viewers and editors, disk utilities, and so on. The question seems to be whether an OS should include Internet capabilities, and the answer seems to be, of course.

Another knock against monopolies is that they are supposed to stifle innovation. Obviously, that isn't true in this case. The auto industry isn't nearly as innovative and turbulent as the supposedly monopolized computer industry.

Being big and dominating the operating system market isn't necessarily a bad thing. Actually,

the dominance of Windows in the operating system market is a very good thing for most of us. It hurts some companies, especially those that attempt to compete in the operating system or certain utility markets. But as much as it hurts those few companies, it benefits many, many more. Perhaps more

operating systems, the potential market for a startup software developer would be only a fraction of the current potential, where 90 percent of the market could buy and use the product. What the Department of Justice sees as a monopoly can also be viewed as a standard.

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What the Department of Justice sees as a monopoly can also be viewed as a standard.

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importantly, it benefits the consumer enormously.

A huge software company can afford to design, produce, and maintain products for multiple operating systems, but the vast majority of developers must choose a single operating system to support. When the market was seriously fragmented between dozens of operating systems, the small guys had almost no chance. Assuming the same size overall computer market (a huge assumption) equally split between four

Standards not only enable small, innovative companies to compete, they also help the rest of the industry, even the big guys. There is little doubt that standards help expand the overall industry. No one is willing to buy something that won't work with his or her investment.

Standards reassure customers that there will be plenty of compatible products, that support staff will be familiar with their equipment, and that trained personnel will be available for hire.

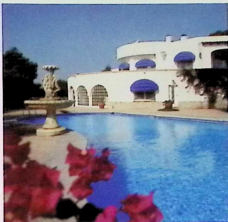
People used to defer computer purchases because they were afraid that their choice would become obsolete. We still use that term today, but the fear is mostly gone. When OSes were not standardized, an obsolete computer was one that wasn't having software or compatible hardware developed for it any longer—in other words, it was doomed to be totally useless. Today's systems don't really become obsolete. They might need to be replaced with a more efficient model, but generally, the older computer remains compatible and can be reassigned to lesser tasks.

The industry needs standards to flourish. Secondary standards, like the Mac OS or Windows NT, aren't bad, but when they get too strong, the market clamors for compatibility.

Like I said, I'm no lawyer, but it seems obvious to me that if a standard OS constitutes a monopoly, then we need a monopoly. Stay on Microsoft's back to ensure that it doesn't abuse that monopoly, but don't wreck the industry to satisfy a few utility developers. **PCGV**

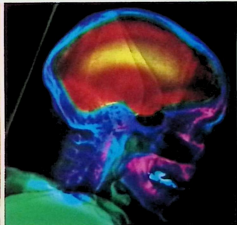
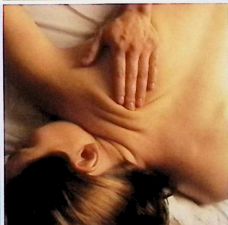
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